EXHIBIT A

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TRANSMITTAL FORM

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Application Number	09/438,669
Filing Date	11/12/99
First Named Inventor	Christie, Joseph Michael
Group Art Unit	2662
Examiner Name	Patel, A.
Total Number of Pages in This Submission	22
Attorney Docket Number	1090e

ENCLOSURES *(check all that apply)*

- [X] Fee Transmittal Form
  - [ ] Fee Attached
- [X] Amendment / Response
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [X] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Assignment Papers *(for an Application)*
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [X] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) ____
- [ ] After Allowance Communication to Group
- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- [ ] Proprietary Information
- [ ] Status Letter
- [X] Other Enclosure(s) *(please identify below)*:
  Version with Markings to Show Changes Made - Pages 10-18

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Brett L. Bornsen Reg. No. 46,566
Signature	
Date	1-15-02

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date: 1/15/02

Typed or printed name	Peggy L. Nieto		
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In the Specification

Please make the following amendments that are provided by replacement paragraphs. The replacement paragraphs are identified by page and beginning line number. Marked-up versions of the amendments to the specification follow the remarks section of this response.

The paragraph on page 1, beginning on line 4: 08/525,897 filed 9-8-95, now

This application is a continuation of United States patent number 5,991,301, entitled "Broadband Telecommunications System", filed on September 8, 1995, which is incorporated by reference into this application, and ~~which~~ is a continuation-in-part of 08/568,551 filed 12-7-95, now United States patent number 5,825,780 entitled "Method, System, and Apparatus for Telecommunications Control", which is incorporated by reference into this application, and which is a continuation of United States patent application number 08/238,605. filed 5-5-94, now abandoned

A1

The paragraph on page 7, beginning on line 1:

User 110 would also seize a connection to system 100. The connection is represented by connection 180 to mux 130. Although, only one connection is shown for purposes of clarity, numerous connections would typically be available for seizure. The seized connection would be identified in the signaling from user 110 to system 100. Signaling processing system 160 would include the identity of this connection in its signaling to mux 130.

A2

The paragraph on page 8, beginning on line 10:

Connection 280 could be any connection or group of connections that contain information that can be converted to DS0 format. Examples of these connections are OC-3, VT1.5, DS3, and DS1. DS0 interface 210 is operable to convert user information in these formats into the DS0 format. AAL 220 comprises both a convergence sublayer and a segmentation and reassembly (SAR) layer. AAL 220 is operational to accept the user information in DS0 format from DS0 interface 210 and convert the information into ATM cells. AALs are known in the art and information about AALs is provided by International Telecommunications Union (ITU) document I.363.1. An AAL for voice is also described in patent application serial number 08/395,745, filed on February 28, 1995, entitled "Cell Processing for Voice Transmission", and hereby incorporated by reference into this application. ATM interface 230 is operational to accept ATM cells and transmit them over connection 283. Connection 283 is a standard DS3 or SONET connection transporting ATM cells. Connection 281 is operational for the DS0 format and connection 282 is operational to transfer ATM cells.

The paragraph on page 11, beginning on line 4:

ATM interface 230 will demux the cells arriving from connection 283 and provide them to AAL 220. AAL 220 converts the user information in the cells into the DS0 format. AAL 220 makes the conversion so that cells from a particular virtual connection are provided to the assigned DS0 on connection 281. DS0 interface will convert the DS0s from connection 281 into the appropriate format, such as DS3, for connection 280. Those skilled in the art are aware of the techniques for muxing and transporting DS0 signals.

The paragraph on page 12, beginning on line 10:

In addition to echo control, the CCM and the mux can work to provide other digital signal processing features on a call by call basis. Compression algorithms can be applied, either universally, or on a per call basis. The decibel level could be adjusted for calls from a particular origin or to a particular destination, i.e. where a hearing impaired person may reside. Encryption could be applied on a call-by-call basis based on various criteria like the origination number or the destination number. Various DSP features could be associated with various call parameters and implemented by the CCM through DSP 325.

The paragraph on page 21, beginning on line 14:

Feature manager 824 would accept messages from detection point manager 828 and either forward a message to auxiliary manager 825 or to switching manager 826. Particular feature messages would be routed to auxiliary manager 825 which will process these call features. These are typically non-IN features, such as echo control or POTS billing. Other feature messages would be routed to switching manager 826. These are typically IN features. Examples of IN features are 800 number translation or a terminal mobility number translation. Feature manager 824 will pass information back to detection point manager 828 (then to origination manager 822) when it is received back from auxiliary manager 825 or switching manager 826.

The paragraph on page 21, beginning on line 22:

Switching manager 826 which will determine if the request will be handled by local resource 827 or by the data handler. Local resource 827 will be structured to provide data more efficiently stored at message handler 820. Examples of such data include: an automatic number identification (ANI) validation table which checks the caller's number, a dialed number translation table to translate POTS numbers into instructions, or N00 translation tables to translate select 800 numbers into routing instructions. Examples of a routing instruction yielded by the tables would be a particular access connection or a virtual connection. An example of data in the data handler would be virtual private network (VPN) routing tables or complex 800 routing plans.

In the Claims

Please make the following amendments that are provided by replacement claims. The replacement claims are identified by claim number. Marked-up versions of the amendments to the claims follow the remarks section of this response.

1. (Amended) An Asynchronous Transfer Mode (ATM) communication method comprising:

receiving signaling associated with a user communication into a processing system;

processing the signaling in the processing system to generate and transmit instructions indicating a virtual identifier and echo cancellation requirements;

receiving the instructions and the user communication into an ATM interworking multiplexer;

in the ATM interworking multiplexer, canceling echo from the user communication in response to the instructions and converting the user communication into ATM cells with the virtual identifier in response to the instructions; and

transferring the ATM cells from the ATM interworking multiplexer.

4. (Amended) The method of claim 1 wherein receiving and processing the signaling comprises receiving and processing telecommunication signaling to select the virtual identifier.

5. (Amended) The method of claim 1 wherein receiving and processing the signaling comprises receiving and processing an initial address message to select the virtual identifier.

6. (Amended) The method of claim 1 wherein receiving and processing the signaling comprises receiving and processing a called number to select the virtual identifier.

7. (Amended) The method of claim 1 wherein processing the signaling in the processing system comprises accessing a service control point.

8. (Amended) The method of claim 1 wherein processing the signaling in the processing system comprises validating a call.

9. (Amended) The method of claim 1 wherein processing the signaling in the processing system comprises screening a call.

10. (Amended) The method of claim 1 wherein processing the signaling in the processing system comprises routing a call.

11. (Amended) The method of claim 1 wherein processing the signaling in the processing system comprises generating billing data for a call.

12. (Amended) The method of claim 1 wherein receiving and processing the signaling comprises receiving and processing a release message to control call termination.

q 9 cont.

13. (Amended) The method of claim 1 wherein receiving and processing the signaling comprises receiving and processing an answer message to control call cut-through.

14. (Amended) An Asynchronous Transfer Mode (ATM) communication method comprising:

receiving signaling associated with a virtual identifier into a processing system;

in the processing system, processing the signaling to select a connection, and generating and transmitting an instruction indicating the virtual identifier and the connection;

receiving the instruction and receiving ATM cells with the virtual identifier into an ATM interworking multiplexer;

in the ATM interworking multiplexer, converting the ATM cells with the virtual identifier into a user communication in response to the instruction; and

transferring the user communication from the ATM interworking multiplexer over the connection in response to the instruction.

q 10

16. (Amended) The method of claim 14 wherein generating and transmitting the instruction comprises generating and transmitting an initial address message.

21. (Amended) An Asynchronous Transfer Mode (ATM) communication system comprising:

a processing system configured to receive signaling associated with a user communication and process the signaling to generate and transmit instructions indicating a virtual identifier and echo cancellation requirements; and

Q11

an ATM interworking multiplexer configured to receive the instructions and the user communication, cancel echo from the user communication in response to the instructions, convert the user communication into ATM cells with the virtual identifier in response to the instructions, and transfer the ATM cells.

34. (Amended) An Asynchronous Transfer Mode (ATM) communication system comprising:

a processing system configured to receive signaling associated with a virtual identifier, process the signaling to select a connection, and generate and transmit an instruction indicating the virtual identifier and the connection; and

Q12

an ATM interworking multiplexer configured to receive the instruction, receive ATM cells with the virtual identifier, convert the ATM cells with the virtual identifier into a user communication in response to the instruction, and transfer the user communication from the ATM interworking multiplexer over the connection in response to the instruction.

Remarks

Claims 1-40 are pending, and claims 1-40 stand rejected. Claims 1, 4-14, 16, 21, and 34 are amended by this response. Applicants respectfully traverse the rejection and request allowance of claims 1-40.

Regarding sections 1-2 of the office action, the Applicants are filing a terminal disclaimer under 37 CFR § 1.321(c) to overcome the non-statutory double patenting rejection. By filing the terminal disclaimer, the Applicants are not admitting that claims 1-40 are not patentably distinct from the claims in U.S. Patent 5,991,301. The Applicants preserve their right to refute the assertions of the Examiner in the future.

Regarding sections 3-4 of the office action, the Examiner rejected claim 21 under 35 USC § 102 in view of U.S. Patent number 5,623,491 (Skoog). Skoog teaches a voice adaptation device 18 that converts T1/E1 signals into ATM cells, and vice-versa (column 3, lines 47-51). Voice adaptation device 18 also performs echo cancellation on all traffic (column 4, lines 25-28 and line 41).

Claim 21 on the other hand describes a processing system that processes signaling to generate instructions that includes a virtual identifier and an echo cancellation requirement. Claim 21 also describes an ATM interworking multiplexer that cancels echo responsive to the instructions and converts the user communication into ATM cells responsive to the instructions. A first distinction between claim 21 and Skoog is that Skoog does not teach a processing system that receives and processes signaling. A second distinction is that Skoog cancels echo all of the time, while claim 21 allows echo cancellation to be controlled by the processing system. This can advantageously save resources within a communication system. A third distinction is that claim 21 advantageously allows one to control the point of conversion between synchronous connections and asynchronous communications. The processing system selects a virtual identifier, and the interworking multiplexer converts the user communication using the virtual identier. Skoog does not teach how to dynamically control voice adaptation device 18 in response to signaling to convert the T1/E1 signals into ATM cells. Skoog does not teach how the identifiers in the ATM cells are selected. Therefore, claim 21 is allowable over Skoog. Independent claims 1, 14, and 34 are allowable for similar reasons.

The Applicants submit that there may be additional reasons in support of patentability, but that such reasons are moot in light of the above remarks and are omitted in the interests of

brevity. The Applicants respectfully request allowance of claims 1-40.

Any fees in addition to those submitted may be charged to deposit account 21-0765.

Respectfully submitted,

Date: 1/15/02

Brett L. Bornsen, Reg. No.: 46,566

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Fax No.: 303-499-5426

CORRESPONDENCE ADDRESS: **Customer No.: 028004**

Version with Markings to Show Changes Made

In the Specification

The following represent marked-up versions of the amendments made to the specification.

The paragraph on page 1, beginning on line 4:

This application is a continuation of [pending] United States patent [application] number 5,991,301 [08/525,897], entitled "Broadband Telecommunications System", filed on September 8, 1995, which is incorporated by reference into this application, and which is a continuation-in-part of United States patent number 5,825,780 entitled "Method, System, and Apparatus for Telecommunications Control", which is incorporated by reference into this application, and which is a continuation of United States patent application number 08/238,605.

The paragraph on page 7, beginning on line 1:

User 110 would also seize a connection to system 100. The connection is represented by connection 180 to mux 130. Although, only one connection is shown for purposes of clarity, numerous connections would typically be available for seizure. The seized connection would be identified in the signaling from user 110 to system 100. Signaling processing system 160 would include the identity of this connection in its [signal] signaling to mux 130.

The paragraph on page 8, beginning on line 10:

Connection 280 could [by] be any connection or group of connections that contain information that can be converted to DS0 format. Examples of these connections are OC-3, VT1.5, DS3, and DS1. DS0 interface 210 is operable to convert user information in these formats into the DS0 format. AAL 220 comprises both a convergence sublayer and a segmentation and reassembly (SAR) layer. AAL 220 is operational to accept the user information in DS0 format from DS0 interface 210 and convert the information into ATM cells. AALs are known in the art and information about AALs is provided by International Telecommunications Union (ITU) document I.363.1. An AAL for voice is also described in patent application serial number 08/395,745, filed on February 28, 1995, entitled "Cell

Processing for Voice Transmission", and hereby incorporated by reference into this application. ATM interface 230 is operational to accept ATM cells and transmit them over connection 283. Connection 283 is a standard DS3 or SONET connection transporting ATM cells. Connection 281 is operational for the DS0 format and connection 282 is operational to transfer ATM cells.

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The paragraph on page 12, beginning on line 10:

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manager 826.

The paragraph on page 21, beginning on line 22:

Switching manager 826 which will determine if the request will be handled by local resource 827 or by the data handler. Local resource 827 will be structured to provide data more efficiently stored at message handler 820. Examples of such data include: an automatic number identification (ANI) validation table which checks the caller's number, a dialed number translation table to translate POTS numbers into [a] routing instructions, or N00 translation tables to translate select 800 numbers into routing instructions. Examples of a routing instruction yielded by the tables would be a particular access connection or a virtual connection. An example of data in the data handler would be virtual private network (VPN) routing tables or complex 800 routing plans.

In the Claims

The following represent marked-up versions of the amendments made to the claims. All of the claims are presented, amended or not, in order to avoid confusion in the event of future prosecution.

1. (Amended) An Asynchronous Transfer Mode (ATM) communication method comprising:

receiving signaling [information] associated with a user communication into a processing system;

processing the signaling [information] in the processing system to generate and transmit instructions indicating a virtual identifier and echo cancellation requirements;

receiving the instructions and the user communication into an ATM interworking multiplexer;

in the ATM interworking multiplexer, canceling echo from the user communication in response to the instructions and converting the user communication into ATM cells with the virtual identifier in response to the instructions; and

transferring the ATM cells from the ATM interworking multiplexer.

2. (Not Amended) The method of claim 1 wherein receiving the user communication comprises

receiving the user communication in an optical format and converting the user communication into an electrical format.

3. (Not Amended) The method of claim 1 wherein receiving the user communication comprises receiving the user communication from a DS0 connection.

4. (Amended) The method of claim 1 wherein receiving and processing the signaling [information] comprises receiving and processing telecommunication signaling to select the virtual identifier.

5. (Amended) The method of claim 1 wherein receiving and processing the signaling [information] comprises receiving and processing an initial address message to select the virtual identifier.

6. (Amended) The method of claim 1 wherein receiving and processing the signaling [information] comprises receiving and processing a called number to select the virtual identifier.

7. (Amended) The method of claim 1 wherein processing the signaling [information] in the processing system comprises accessing a service control point.

8. (Amended) The method of claim 1 wherein processing the signaling [information] in the processing system comprises validating a call.

9. (Amended) The method of claim 1 wherein processing the signaling [information] in the processing system comprises screening a call.

10. (Amended) The method of claim 1 wherein processing the signaling [information] in the processing system comprises routing a call.

11. (Amended) The method of claim 1 wherein processing the signaling [information] in the processing system comprises generating billing data for a call.

12. (Amended) The method of claim 1 wherein receiving and processing the signaling [information] comprises receiving and processing a release message to control call termination.

13. (Amended) The method of claim 1 wherein receiving and processing the signaling [information] comprises receiving and processing an answer message to control call cut-through.

14. (Amended) An Asynchronous Transfer Mode (ATM) communication method comprising:

receiving signaling [information] associated with a virtual identifier into a processing system;

in the processing system, processing the signaling [information] to select a connection, and generating and transmitting [generate and transmit] an instruction indicating the virtual identifier and the [a] connection [and to generate and transmit signaling indicating the connection];

receiving the instruction and receiving ATM cells with the virtual identifier into an ATM interworking multiplexer;

in the ATM interworking multiplexer, converting the ATM cells with the virtual identifier into a user communication in response to the instruction; and

transferring the user communication from the ATM interworking multiplexer over the connection in response to the instruction.

15. (Not Amended) The method of claim 14 wherein transferring the user communication over the connection comprises transferring the user communication over a DS0 connection.

16. (Amended) The method of claim 14 wherein generating and transmitting the instruction [signaling] comprises generating and transmitting an initial address message.

17. (Not Amended) The method of claim 14 wherein receiving and processing the information comprises receiving and processing an initial address message to select the connection.

18. (Not Amended) The method of claim 14 wherein receiving and processing the information

comprises receiving and processing a called number to select the connection.

19. (Not Amended) The method of claim 14 wherein receiving and processing the information comprises receiving and processing a release message to control call termination.

20. (Not Amended) The method of claim 14 wherein receiving and processing the information comprises receiving and processing an answer message to control call cut-through.

21. (Amended) An Asynchronous Transfer Mode (ATM) communication system comprising:

a processing system configured to receive signaling [information] associated with a user communication and process the signaling [information] to generate and transmit instructions indicating a virtual identifier and echo cancellation requirements; and

an ATM interworking multiplexer configured to receive the instructions and the user communication, cancel echo from the user communication in response to the instructions, convert the user communication into ATM cells with the virtual identifier in response to the instructions, and transfer the ATM cells.

22. (Not Amended) The system of claim 21 wherein the ATM interworking multiplexer is configured to receive the user communication in an optical format and convert the user communication into an electrical format.

23. (Not Amended) The system of claim 21 wherein the ATM interworking multiplexer is configured to receive the user communication from a DS0 connection.

24. (Not Amended) The system of claim 21 wherein the processing system is configured to receive and process telecommunication signaling to select the virtual identifier.

25. (Not Amended) The system of claim 21 wherein the processing system is configured to receive and process an initial address message to select the virtual identifier.

26. (Not Amended) The system of claim 21 wherein the processing system is configured to receive and process a called number to select the virtual identifier.

27. (Not Amended) The system of claim 21 wherein the processing system is configured to access a service control point.

28. (Not Amended) The system of claim 21 wherein the processing system is configured to validate a call.

29. (Not Amended) The system of claim 21 wherein the processing system is configured to screen a call.

30. (Not Amended) The system of claim 21 wherein the processing system is configured to route a call.

31. (Not Amended) The system of claim 21 wherein the processing system is configured to generate billing data for a call.

32. (Not Amended) The system of claim 21 wherein the processing system is configured to receive and process a release message to control call termination.

33. (Not Amended) The system of claim 21 wherein the processing system is configured to receive and process an answer message to control call cut-through.

34. (Amended) An Asynchronous Transfer Mode (ATM) communication system comprising:

a processing system configured to receive signaling [information] associated with a virtual identifier, [and] process the signaling [information] to select a connection, and generate and transmit an instruction indicating the virtual identifier and the [a] connection [and to generate and transmit signaling indicating the connection]; and

an ATM interworking multiplexer configured to receive the instruction, receive ATM cells with the virtual identifier, convert the ATM cells with the virtual identifier into a user communication [communications] in response to the instruction, and transfer the user communication [communications] from the ATM interworking multiplexer over the connection in response to the instruction.

35. (Not Amended) The system of claim 34 wherein the ATM interworking multiplexer is configured to transfer the user communications over a DS0 connection in response to the instruction.

36. (Not Amended) The system of claim 34 wherein the processing system is configured to

generate and transmit an initial address message indicating the connection.

37. (Not Amended) The system of claim 34 wherein the processing system is configured to receive and process an initial address message to select the connection.

38. (Not Amended) The system of claim 34 wherein the processing system is configured to receive and process a called number to select the connection.

39. (Not Amended) The system of claim 34 wherein the processing system is configured to receive and process a release message to control call termination.

40. (Not Amended) The system of claim 34 wherein the processing system is configured to receive and process an answer message to control call cut-through.