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(54) **ADAPTIVE INSTANT MESSAGING**

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(57)   **ABSTRACT**

A method, apparatus, and system for communicating an instant message where the destination of the instant message may select whether to receive the instant message as text or speech independent of the origin of the instant message.
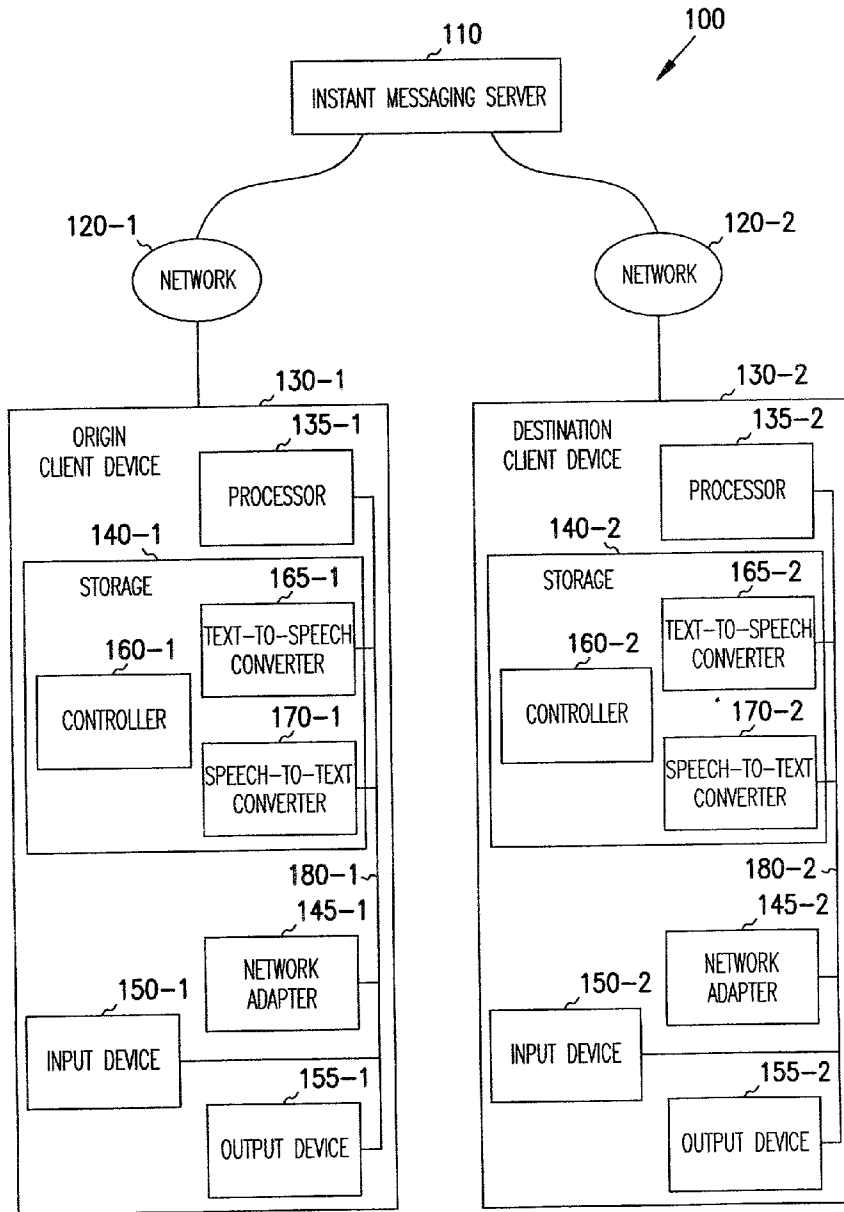
100

110

INSTANT MESSAGING SERVER

120-1

NETWORK

120-2

NETWORK

130-1

ORIGIN CLIENT DEVICE

135-1

PROCESSOR

140-1

STORAGE

165-1

TEXT-TO-SPEECH CONVERTER

160-1

CONTROLLER

170-1

SPEECH-TO-TEXT CONVERTER

180-1

145-1

NETWORK ADAPTER

150-1

INPUT DEVICE

155-1

OUTPUT DEVICE

130-2

DESTINATION CLIENT DEVICE

135-2

PROCESSOR

140-2

STORAGE

165-2

TEXT-TO-SPEECH CONVERTER

160-2

CONTROLLER

170-2

SPEECH-TO-TEXT CONVERTER

180-2

145-2

NETWORK ADAPTER

150-2

INPUT DEVICE

155-2

OUTPUT DEVICE

FIG. 1

FIG. 2

START ~ 300

305

RECEIVE A TEXT
INSTANT MESSAGE

315

IS THE
DESTINATION
CLIENT DEVICE'S SPEECH
OPTION
SELECTED?

NO

YES

320

CONVERT
TEXT–TO–SPEECH

330

DISPLAY THE
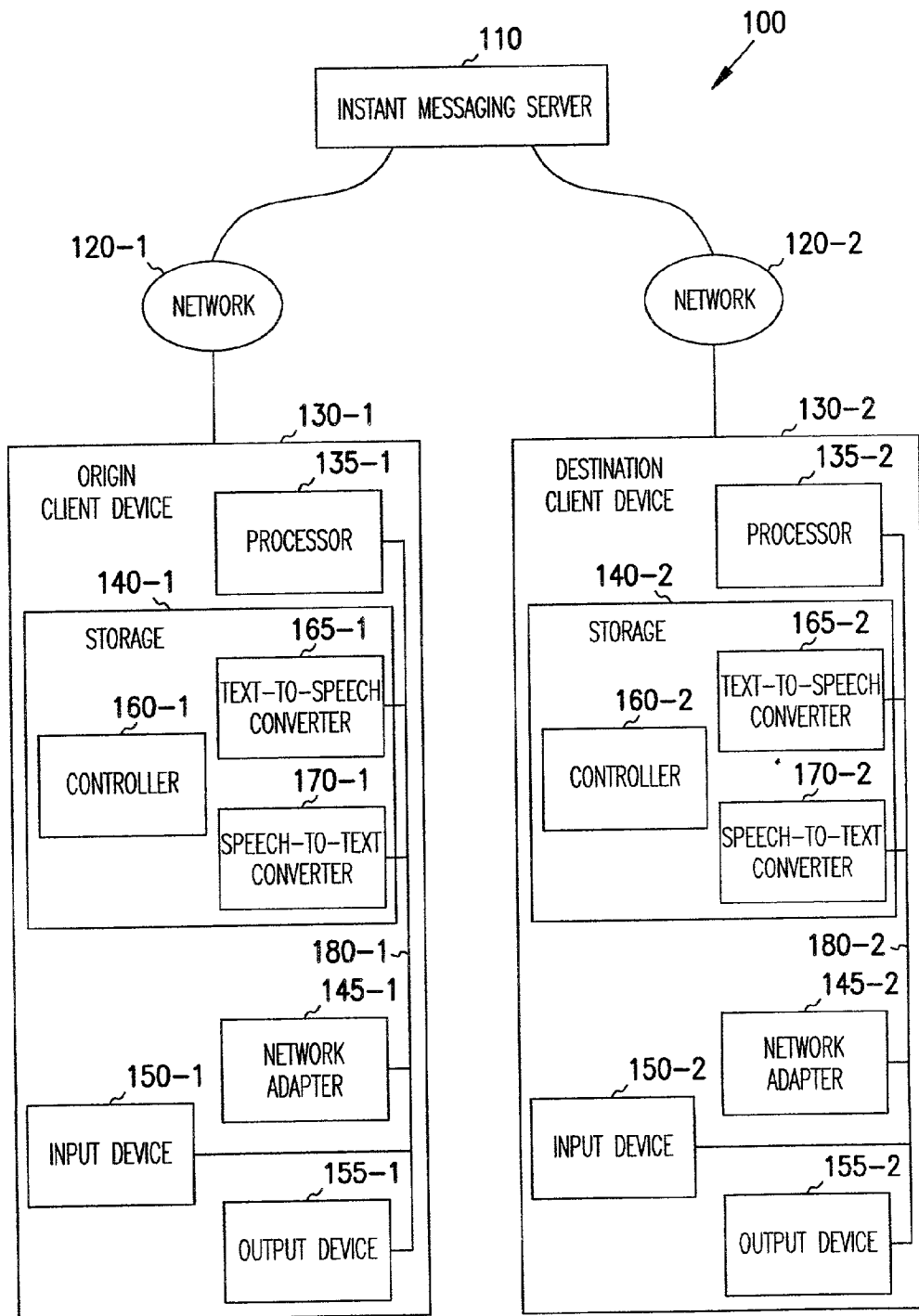TEXT MESSAGE
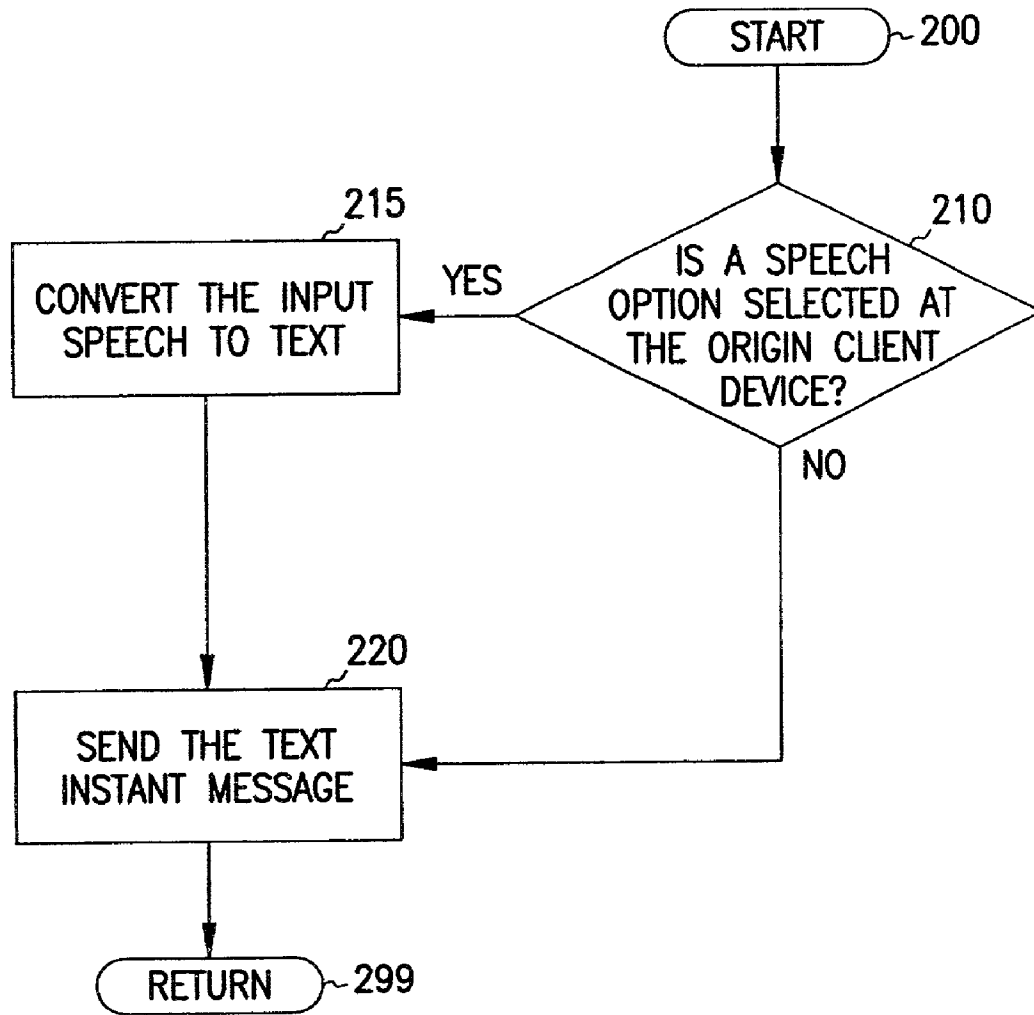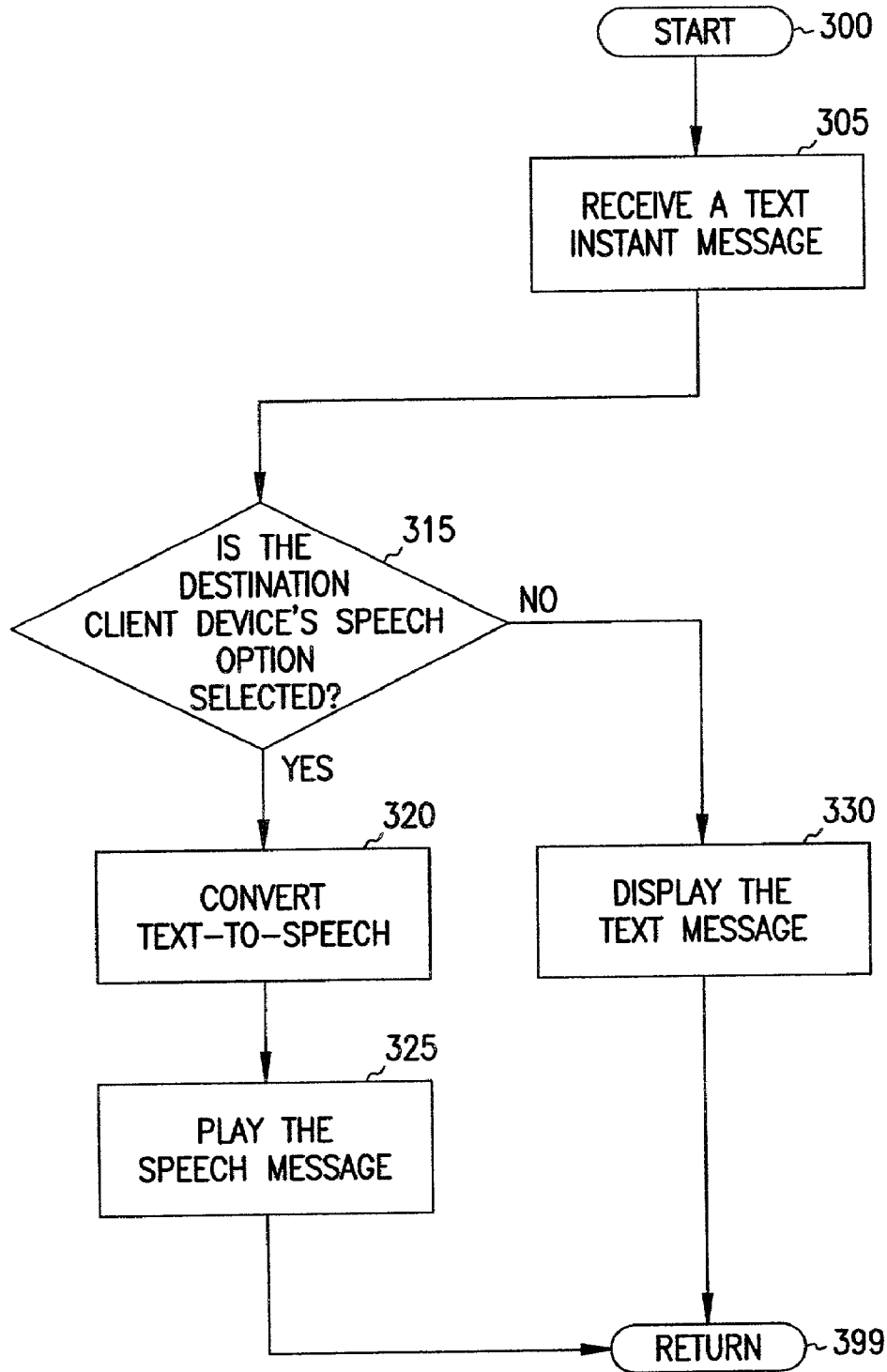
325

PLAY THE
SPEECH MESSAGE

RETURN ~ 399

FIG. 3

ADAPTIVE INSTANT MESSAGING

FIELD

[0001] This invention relates generally to communication between computing devices and more particularly to instant messaging between computing devices in a network.

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BACKGROUND

[0003] When computer networks, such as the Internet, first began, users sent electronic mail (email) to each other. Email is passed between nodes in a network using a "store-and-forward" technique where an email is stored at a node in a network until a short-lived connection is established to the next node, at which time the email is passed along. Eventually, after traveling through possibly multiple nodes, the email arrives at the destination node.

[0004] But, users wanted a faster way to communicate more akin to talking, so now instant messaging services are available that deliver messages faster than email and allow text-based communication to occur in a rapid, conversational fashion. Whereas email is a store-and-forward system based on short-lived connections, recipients listening for instant messages remain connected to their server on a long-lived connection. This long-lived connection allows instant messages to be delivered in close to real time.

[0005] Another difference of some instant messaging systems from email systems is that instant messages are delivered to a recipient if the recipient is listening for messages and there are no obstacles to delivery. Otherwise, the message is dropped, and the sender is informed of the delivery failure. Thus, in some instant messaging systems, messages are not queued or saved.

[0006] A still further difference of instant messaging from email is that email is fundamentally built on one-way message passing, while instant messaging systems are typically built on request-reply pairs. Many instant messaging services also include a presence function, which enables the instant messaging system (and also other users) to know when a particular user is online.

[0007] Yet another difference of instant messaging from email is that many instant messaging services have the concept of presence information. That is, the instant messaging service and a user know when other users are connected. An example of an instant messaging service that does not have presence information is SMS (Short Message Service), which provides the capability to send short messages to mobile digital phones.

[0008] Users may send and receive instant messages from and to a wide variety of client computing devices. For example, laptop or notebook computers, desktop computers, mainframe computers, handheld computers, and PDAs (Personal Digital Assistants) are a few of the possible client computing devices.

[0009] Also, users may operate the client devices in a wide variety of locations and circumstances. For example, one user might be in a meeting in a physical conference room and wish to have a side conversation via instant messaging without disturbing the other meeting participants. Another user might be alone in an automobile and wish to have hands-free operation of instant messaging, with no concern for the instant messages bothering others.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 depicts a block diagram of an embodiment of the invention.

[0011] FIG. 2 depicts a flowchart of processing for a transmit instant-message function at an origin-client device, according to an embodiment of the invention.

[0012] FIG. 3 depicts a flowchart of processing for a receive instant-message function at a destination-client device, according to an embodiment of the invention.

DETAILED DESCRIPTION

[0013] In the following detailed description of exemplary embodiments of the invention, reference is made to the accompanying drawings (where like numbers represent like elements), which form a part hereof, and in which is shown by way of illustration specific exemplary embodiments in which the invention may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice the invention, but other embodiments may be utilized and logical, mechanical, electrical, and other changes may be made without departing from the scope of the present invention. The following detailed description is, therefore, not to be taken in a limiting sense, and the scope of the present invention is defined only by the appended claims.

[0014] In the following description, numerous specific details are set forth to provide a thorough understanding of the invention. However, it is understood that the invention may be practiced without these specific details. In other instances, well-known circuits, structures and techniques have not been shown in detail in order not to obscure the invention.

[0015] FIG. 1 depicts a block diagram of instant messaging system 100, according to an embodiment of the invention. Instant messaging system 100 includes instant-messaging server 110, networks 120-1 and 120-2, origin-client device 130-1, and destination-client device 130-2. Although two client devices (130-1 and 130-2) are shown, in other embodiments any number of client devices may be present.

[0016] Instant-messaging server 110 receives text messages across network 120-1 from origin-client devices, such as origin-client device 130-1, and forwards the text messages across network 120-2 to the appropriate destination-client device, such as destination-client device 130-2. Instant-messaging server 110 may be a server computer. Instant-messaging server 110 may use any suitable instant messaging functions. Examples of instant-messaging serv-

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