co-located with or separate from SCS **28** or GW **22**. Earth terminals **24** associated with SCSs **28** receive data describing tracking of satellites **12** and relay packets of control information while ETs **24** associated with GWs **22** only relay data packets (e.g., relating to calls in progress).

Subscriber units **26** may be located anywhere on the surface of the earth or in the atmosphere above the earth. Subscriber units **26** are preferably communications devices capable of transmitting data to and receiving data from satellites **12**. By way of example, SUs **26** may be a hand-held, portable cellular telephones adapted to communicate with satellites **12**. Ordinarily, SUs **26** need not perform any control functions for communication system **10**.

Communication system **10** may accommodate any number, potentially in the millions, of subscriber units **26**. In the preferred embodiments of the present invention, subscriber units **26** communicate with nearby satellites **12** via subscriber links **16**. Subscriber links **16** encompass a limited portion of the electromagnetic spectrum that is divided into numerous channels. Subscriber links **16** are preferably combinations of L-Band frequency channels and may encompass Frequency Division Multiplex Access (FDMA) and/or Time Division Multiple Access (TDMA) communications (infra) or combination thereof. As a minimum, a satellite **12** continuously transmits over one or more broadcast channels **18**. Subscriber units **26** synchronize to broadcast channels **18** and monitor broadcast channels **18** to detect data messages which may be addressed to them. Subscriber units **26** may transmit messages to satellites **12** over one or more acquisition channels **19**. Broadcast channels **18** and acquisition channels **19** are not dedicated to any one subscriber unit **26** but are shared by all subscriber units **26** currently within view of a satellite **12**.

On the other hand, traffic channels **17** are two-way channels that are assigned to particular subscriber units **26** by satellites **12** from time to time.

Satellites **12** communicate with other nearby satellites **12** through cross links **23**. Thus, a communication from a subscriber unit **26** located at any point on or near the surface of the earth may be routed through the constellation of satellites **12** to within range of substantially any other point on the surface of the earth. A communication may be routed down to a subscriber unit **26** on or near the surface of the earth from a satellite **12** using a subscriber link **16**. Alternatively, a communication may be routed down to or up from any of many ETs **24**, of which FIG. **1** shows only two, through earth links **15**. Earth terminals **24** are preferably distributed over the surface of the earth in accordance with geo-political boundaries. In the preferred embodiments, each satellite **12** may communicate with up to four ETs **24** and over a thousand subscriber units **26** at any given instant.

System control segment **28** monitors the health and status of system communication nodes (e.g., GWs **22**, ETs **24** and satellites **12**) and desirably manages operations of communication system **10**. One or more ETs **24** provide the primary communications interface between SCS **28** and satellites **12**. Earth terminals **24** include antennas and RF transceivers and preferably perform telemetry, tracking and control functions for the constellation of satellites **12**.

Gateways **22** may perform call processing functions in conjunction with satellites **12** or GWs **22** may exclusively handle call processing and allocation of call handling capacity within communication system **10**. Diverse terrestrial-based communications systems, such as the PSTN, may access communication system **10** through GWs **22**. With the example constellation of sixty-six satellites **12**, at least one of satellites **12** is within view of each point on earth's surface at all times (i.e., full coverage of the earth's surface is obtained). Theoretically, any satellite **12** may be in direct or indirect data communication with any SU **26** or ET **24** at any time by routing data through the constellation of satellites **12**. Accordingly, communication system **10** may establish a communication path for relaying data through the constellation of satellites **12** between any two SUs **26**, between SCS **28** and GW **22**, between any two GWs **22** or between SU **26** and GW **22**.

FIG. **2** illustrates a simplified block diagram of a subscriber unit **26** suitable for use in a preferred embodiment of the present invention. Subscriber unit **26** (analogous to subscriber unit **26** of FIG. **1**) communicates with communication system **10**, and may also communicate through communication system **10** to other SUs **26** or another telecommunication device. Subscriber unit **26** includes transceiver **42** which transmits and receives signals to and from communication system **10** using antenna **41**. Transceiver **42** is desirably a multi-channel transceiver capable of transmitting and receiving on all frequency channels in specified time slots as required by communication system **10**.

Transceiver **42** couples to a processor **44**, which controls the frequency and timing parameters upon which transceiver **42** operates. In addition, processor **44** preferably controls the power level at which transceiver **42** transmits signals. Additionally, processor **44** desirably couples to input/output (I/O) user interface **46**, timer **48**, and memory **43**. Processor **44** uses timer **48** to maintain the current date and time. Memory **43** includes semiconductor, magnetic, and other storage devices for storing data which serve as instructions to processor **44** and which, when executed by processor **44**, cause subscriber unit **26** to carry out procedures which are discussed below. In addition, memory **43** includes variables, tables, and databases that are manipulated during the operation of subscriber unit **26**.

Keypad **45** couples to processor **44**, memory **43**, timer **48**, and storage medium **55**. Keypad **45** is comprised of alphanumeric keys suitable for entering data for creating, sending, or receiving data message files via subscriber unit **26**.

Display **52** couples to user interface **46**. Display **52** may be, but not limited to, a liquid crystal display (LCD), light emitting diode (LED), or cathode ray tube (CRT). Display **52** may be monochrome or color. Display **52** is suitable for displaying data messages.

Subscriber unit **26** includes port **54**, which couples to processor **44** in conjunction with timer **48**, memory **43**, storage medium **55**, and transceiver **42**. Port **54** is used for input or output of data as discussed below.

Subscriber unit **26** includes storage medium **55**, which couples to processor **44**. Storage medium **55** includes semiconductor, magnetic, and other storage devices for storing instructions for sending and receiving message files and for storing message files. In one embodiment, storage medium **55** is removable from subscriber unit **26** and can be used in other subscriber units **26**. In another preferred embodiment, storage medium **55** is removable and compatible for use in public telephone systems. In another preferred embodiment, storage medium **55** is removable and compatible for use in computer systems. In another preferred embodiment, the information on storage medium **55** is transferred to another subscriber unit **26** using port **54**. In another preferred embodiment, the information on storage medium **55** is transferred to a computer system or can be transferred to a device capable of reading and accepting information stored in storage medium **55** through port **54**.