Claims

1. A communication device comprising:

a primary communication unit operable between an operational state in which a primary communication channel is able to be established for communication with a remote control station and a non-operational state in which the primary communication unit is unable to communicate with the remote control station, the primary communication channel including a primary radio link;

an auxiliary communication unit configurable in an operational state for establishing an auxiliary communication channel for communicating with the remote control station, the auxiliary communication channel including an auxiliary radio link; and

a controller for switching the primary communication unit between the non-operational state and the operational state in dependence on a triggering signal;

wherein the auxiliary communication unit in the operational state requires lower operating power than the primary communication unit in the operational state.

2. The communication device of claim 1, wherein the primary radio link and/or the auxiliary radio link includes a terrestrial-based link.

3. The communication device of claim 1, wherein the primary radio link and/or the auxiliary radio link includes a satellite-based link.

4. The communication device of any preceding claim, wherein the primary communication channel and/or auxiliary communication channel includes a ground link.

5. The communication device of any preceding claim, wherein the triggering signal is received from the remote control station via the auxiliary radio link.

6. The communication device according to any preceding claim, further comprising a secondary communication channel for communicating with at least one data acquisition device.

7. The communication device according to claim 6, wherein the triggering signal is received via the secondary communication channel.

8. The communication device according to claim 6 or 7, wherein the secondary communication channel is at least one of a wired and wireless communication channel.

9. The communication device according to any of claims 6 to 8, wherein the primary communication unit is configured to receive telemetry data via the secondary communication channel for transmission to the remote control station via the primary communication channel.

10. The communication device according to claim 6, wherein controller is configured to retrieve telemetry data from the at least one data acquisition device via the secondary communication channel in response to the triggering signal.

11. The communication device according to any preceding claim, wherein the operational state of the primary communication unit includes an active state in which the primary communication unit is able to transmit and receive data to or from the remote control station at any time and a sniffing state in which the primary communication unit is powered for communication with the remote control station only at intervals.

12. The communication device according to any preceding claim, wherein the operational state of the auxiliary communication unit includes an active state in which the auxiliary communication unit is able to transmit and receive data to or from the remote control station at any time and a sniffing state in which the auxiliary communication unit is powered for communication with the remote control station only at intervals.

13. The communication device according to claim 12, wherein the auxiliary communication unit is configured normally in the sniffing state.

14. A communication network comprising:

a primary communication channel including a primary radio link;

an auxiliary communication channel including an auxiliary radio link;

a communication device; and

a remote control station located remotely from the communication device; wherein

the communication device includes:

(i) a primary communication unit operable between an operational state in which the primary communication channel is able to be established for communication with the remote control station and a non-operational state in which the primary communication unit is unable to communicate with the remote control station,

(ii) an auxiliary communication unit configurable in an operational state for establishing the auxiliary communication channel for communicating with the remote control station, and

(iii) a controller for switching the primary communication unit between the non-operational state and the operational state in dependence on a triggering signal,

wherein the auxiliary communication unit in the operational state requires lower operating power than the primary communication unit in the operational state.

15. A communication network according to claim 14, wherein the primary radio link includes a telecommunications satellite.

16. A communication network according to claim 15, wherein the auxiliary radio link uses the same telecommunications satellite as the primary radio link.

17. A communication method between a communication device and a remote control station, the communication device including a primary communication unit operable between an operational state and a non-operational state and an

auxiliary communication unit configurable in an operational state, with the auxiliary communication unit in the operational state, the method comprises:

establishing an auxiliary communication channel between the auxiliary communication unit and the remote control station, the auxiliary communication channel including an auxiliary radio link;

receiving a triggering signal;

switching the primary communication unit from the non-operational state in which the primary communication unit is unable to communicate with the remote control station to the operational state; and

with the primary communication unit in the operational state,

establishing a primary communication channel between the primary communication unit and the remote control station, the primary communication channel including a primary radio link,

wherein the auxiliary communication unit in the operational state requires lower operating power than the primary communication unit in the operational state.

18. A communication method according to claim 17, wherein the triggering signal is received via the auxiliary communication channel.

19. A communication method according to claim 17 or 18, further comprising sending data to the remote control station via the primary communication channel.

20. A communication method between a communication device and a remote control station, the communication device including a primary communication unit operable between an operational state in which a primary communication channel is able to be established for communication with the remote control station, and a non-operational state in which the primary communication channel is unable to communicate with the remote control station, and an auxiliary communication unit, the method comprises:

establishing an auxiliary communication channel between the auxiliary communication unit and the remote control station, the auxiliary communication channel including an auxiliary radio link;

transmitting a triggering signal to the communication device via the auxiliary communication channel;

establishing the primary communication channel between the primary communication unit and the remote control station, the primary communication channel including a primary radio link; and

receiving data from the communication device via the primary communication channel.

CLAIMS

1. A communication device adapted to interface between a remote control station and at least one data acquisition device, the at least one data acquisition device being arranged to acquire data for transmission to the remote control station by the communication device, the communication device comprising:

a primary communication unit operable between an operational state in which a primary communication channel is able to be established for upstream and downstream communication with the remote control station and a non-operational state in which the primary communication unit is unable to communicate with the remote control station, the primary communication channel including a primary radio link;

an auxiliary communication unit configurable in an operational state for establishing an auxiliary communication channel for upstream and downstream communication with the remote control station, the auxiliary communication channel including an auxiliary radio link;

a controller for switching the primary communication unit between the non-operational state and the operational state in dependence on a triggering signal; and

a secondary communication channel for communicating with the at least one data acquisition device, the secondary communication channel being configured to transmit the acquired data from the data acquisition device to one of the primary communication unit and the auxiliary communication unit for transmission to the remote control station using one of the primary communication channel and the auxiliary communication channel;

wherein the auxiliary communication unit in the operational state requires lower operating power than the primary communication unit in the operational state.

2. The communication device of claim 1, wherein the primary radio link and/or the auxiliary radio link includes a terrestrial-based link.

3. The communication device of claim 1, wherein the primary radio link and/or the auxiliary radio link includes a satellite-based link.

4. The communication device of any preceding claim, wherein the primary communication channel and/or auxiliary communication channel includes a ground communication link.

5. The communication device of any preceding claim, wherein the triggering signal is received from the remote control station via the auxiliary radio link.

6. The communication device according to any preceding claim, wherein the triggering signal is received via the secondary communication channel.

7. The communication device according to any preceding claim, wherein the secondary communication channel is at least one of a wired and wireless communication channel.

8. The communication device according to any preceding claim, wherein the primary communication unit is configured to receive telemetry data via the secondary communication channel for transmission to the remote control station via the primary communication channel.

9. The communication device according to any preceding claim, wherein controller is configured to retrieve telemetry data from the at least one data acquisition device via the secondary communication channel in response to the triggering signal.

10. The communication device according to any preceding claim, wherein controller is configured to send supervisory data to the at least one data acquisition device via the secondary communication channel in response to the triggering signal.

11. The communication device according to any preceding claim, wherein the operational state of the primary communication unit includes an active state in which the primary communication unit is able to transmit and receive data to or from

the remote control station at any time and a sniffing state in which the primary communication unit is powered for communication with the remote control station only at intervals.

12. The communication device according to any preceding claim, wherein the operational state of the auxiliary communication unit includes an active state in which the auxiliary communication unit is able to transmit and receive data to or from the remote control station at any time and a sniffing state in which the auxiliary communication unit is powered for communication with the remote control station only at intervals.

13. The communication device according to claim 12, wherein the auxiliary communication unit is configured normally in the sniffing state.

14. A communication network comprising:

a primary communication channel including a primary radio link;

an auxiliary communication channel including an auxiliary radio link;

a communication device adapted to interface a remote control station and at least one data acquisition device, the at least one data acquisition device being arranged to acquire data for transmission to the remote control station by the communication device, the remote control station being located remotely from the communication device; wherein

the communication device includes:

(i) a primary communication unit operable between an operational state in which the primary communication channel is able to be established for upstream and downstream communication with the remote control station and a non-operational state in which the primary communication unit is unable to communicate with the remote control station,

(ii) an auxiliary communication unit configurable in an operational state for establishing the auxiliary communication channel for upstream and downstream communication with the remote control station,

(iii) a controller for switching the primary communication unit between the non-operational state and the operational state in dependence on a triggering signal; and

(iv) a secondary communication channel for communicating with the at least one data acquisition device, the secondary communication channel being configured to transmit the acquired data from the data acquisition device to one of the primary communication unit and the auxiliary communication unit for transmission to the remote control station using one of the primary communication channel and the auxiliary communication channel;

wherein the auxiliary communication unit in the operational state requires lower operating power than the primary communication unit in the operational state.

15. A communication network according to claim 14, wherein the primary radio link includes a telecommunications satellite.

16. A communication network according to claim 15, wherein the auxiliary radio link uses the same telecommunications satellite as the primary radio link.

17. A communication method between a communication device, at least one data acquisition device and a remote control station, the communication device including a primary communication unit operable between an operational state in which a primary communication channel is able to be established for upstream and downstream communication with the remote control station and a non-operational state in which the primary communication unit is unable to communicate with the remote control station, the primary communication channel including a primary radio link, and an auxiliary communication unit configurable in an operational state for establishing an auxiliary communication channel for upstream and downstream communication with the remote control station, the auxiliary communication channel including an auxiliary radio link, the method comprises:

receiving a triggering signal;

providing a secondary communication channel for communicating with the at least one data acquisition device;

transmitting the acquired data from the secondary communication channel to one of the primary communication unit and the auxiliary communication unit for transmission to the remote control station using one of the primary communication channel and the auxiliary communication channel;

wherein the auxiliary communication unit in the operational state requires lower operating power than the primary communication unit in the operational state.

18. A communication method according to claim 17, wherein the triggering signal is received via the auxiliary communication channel.

19. A communication method according to claim 17 or 18, further comprising sending data to the remote control station via the primary communication channel.