CLAIMS

1. A system for providing a synchronised clock signal at a plurality of remote stations, including:

a reference clock signal at a reference station, the reference clock signal being a signal from a Coordinated Universal Time Clock,

a clock signal indicator at each remote station,

a two-way direct communication connection between the reference station and each remote station,

a processing unit at the reference station,

in which the processing unit is operable to determine at least one latency in each clock signal indicator through each communication connection and to determine therefrom a remote station offset for each remote station, the processing unit being operable to store each remote station offset,

in which the reference station is operable to send to each remote station an individual clock signal based upon the reference clock signal and the associated station offset such that the clock signal indicators of all the remote stations are synchronised;

in which the reference station is operable to adjust each remote station offset on the basis of a determined reference time offset based on:

a difference between the reference clock signal and a reference clock signal of a second reference station wherein the reference clock signal of the second reference station is a signal from a Coordinated Universal Time Clock, or

an offset from a mean UTC.

2. A system according to Claim 1, in which the two-way direct communication connection between the reference station and each remote station is a wired connection.

3. A system according to Claim 2, in which the wired connection is an optical fibre connection.

4. A system according to any preceding claim, in which the processing unit is operable to repeat at intervals the determination of the latency of each remote station and to adjust the remote station offsets on the basis of each determination.

5. A system according to any preceding claim, in which the reference station is operable to exchange time and frequency data with the second reference station in order to determine the reference time offset.

6. A system according to any preceding claim, in which the reference stations are operable repeatedly to determine a reference time offset at intervals, preferably at regular intervals, preferably hourly.

7. A method of providing a synchronised clock signal at a plurality of remote stations, in which each remote station includes a clock signal indicator and is connected to a reference station by a two-way direct communication connection, the method including the steps of:

(a) providing a reference clock signal at the reference station, the reference clock signal being a signal from a Coordinated Universal Time Clock,

in which the reference station determines at least one latency in the clock signal indicator through each communication connection and determines therefrom a remote station offset for each remote station, and

the reference station sends to each remote station an individual clock signal based upon the reference clock signal and the associated station offset such that the clock signal indicators of all the remote stations are synchronised;

(b) determining a reference time offset based on:

(i) a difference between the reference clock signal and a reference clock signal of a second reference station wherein the reference clock signal of the second reference station is a signal from a Coordinated Universal Time Clock, or

(ii) an offset from a mean UTC;

(c) adjusting each remote station offset on the basis of the determined reference time offset.

8. A method according to Claim 7, in which the two-way direct communication connection between the reference station and each remote station is a wired connection.

9. A method according to Claim 8, in which the wired connection is an optical fibre connection.

10. A method according to any of Claims 7 to 9, in which the reference station repeats at intervals the determination of the latency of each remote station and adjusts the remote station offsets on the basis of each determination.

11. A method according to any of Claims 7 to 10, in which the reference station exchanges time and frequency data with the second reference station in order to determine the reference time offset.

12. A method according to any of Claims 7 to 11, in which the reference stations repeatedly determine a reference time offset at intervals, preferably at regular intervals, preferably hourly.