

**CLAIMS**

1. Communication system comprising two remote radio equipment items (200 and 250) that can interchange data, said communication relying on a waveform transmitted in dwells, at least one of said radio equipment items including at least two antennas (221, 222, 223), characterized in that said or each said radio equipment item including at least two antennas comprises:
  - an antenna switching means (230) configured to select, for each dwell, one of said antennas according to at least one deterministic switching law, and
  - a control means (240) for said antenna switching means.
2. Communication system according to claim 1, in which said antenna selection law covers all of the transmission/reception antenna pairs in a statistically uniform manner.
3. Communication system according to either of the preceding claims, in which said switching means comprises a first switching law allowing selection of an antenna when the equipment item is used for transmission and a second switching law allowing selection of an antenna when the equipment item is used for reception.
4. Communication system according to one of the preceding claims, in which said control means is configured to indicate to said switching means a transmission/reception state of the equipment item and the start of an interval between two dwells.
5. Communication system according to one of the preceding claims, in which said data are coded and interleaved on a plurality of dwells of the waveform.

6. Communication system according to one of the preceding claims, in which each radio equipment item including at least two antennas contains only a single transmission radio chain (211) and/or a single reception radio chain (261) that can be selectively connected to said antennas by said antenna switching means.

7. Communication system according to one of the preceding claims, in which said antennas of each radio equipment item including at least two antennas are spaced apart by a gap greater than  $\lambda/2$ ,  $\lambda$  being the wavelength linked to the transmission frequency.

8. Communication system according to one of Claims 1 to 6, in which said antennas of each radio equipment item including at least two antennas have different polarizations.

9. Communication system according to one of the preceding claims, in which the antennas used on each radio equipment item including at least two antennas have identical radiation patterns.

10. Communication system according to one of the preceding claims, in which the waveform moreover implements a frequency hopping mechanism.

11. Communication system according to one of the preceding claims, in which said switching means is adapted to, on transmission, selectively connect said antennas to a single transmission radio chain (511) and to, on reception, connect said antennas to respective reception radio chains (512 and 513).

12. Communication system according to one of the preceding claims, in which said switching means is adapted to, on transmission, connect said antennas to respective transmission radio chains and to, on reception, selectively connect said antennas to a single reception radio chain.

13. Communication method implemented in a radio equipment item including at least two antennas (221, 222 and 223) belonging to a communication system between two remote radio equipment items (200 and 250) that can interchange data, said communication relying on a waveform transmitted in dwells, characterized in that the equipment item comprises an antenna switching means (230) for switching antennas according to at least one deterministic switching law, and a control means (240), and in that it comprises, for each of the dwells, the steps of:
- sending (601), by the control means, of a command to said antenna switching means, indicating a switching instant,
  - selection (604), according to said switching law, of an antenna to be used, and
  - switching (605) to the selected antenna.
14. Communication method according to Claim 13, in which the equipment item comprises a first switching law used for transmission and a second switching law used for reception, the method moreover comprising the steps of:
- sending (602), by the control means, of a command to said switching means, indicating a transmission/reception state of the equipment item,
  - selection (603) of a switching law according to the transmission/reception state of the equipment item.
15. Communication method according to either of Claims 13 and 14, moreover comprising a preliminary step (600) of programming of at least one switching law.