# CLAIMS

1. An antenna structure for telecommunications comprising: an emitting surface comprising at least one set of a plurality of elementary emitting antennas forming an array, at least one elementary emitting antenna comprising two generally circular patches that are at least partially superimposed, the at least one elementary emitting antenna being dimensioned to emit at least one electromagnetic wave having a frequency comprised between 27 GHz and 31 GHz, and a receiving surface comprising at least one set of a plurality of elementary receiving antennas forming an array, at least one elementary receiving antenna comprising two generally circular patches that are at least partially superimposed, said at least one elementary receiving antenna being dimensioned to receive at least one electromagnetic wave having a frequency comprised between 17.3 GHz and 21.2 GHz.

2. The method according to claim 1, wherein: each patch of said at least one elementary emitting antenna has a center, said elementary emitting antenna comprising two power supply ports able to power one of the two patches, each port being in an angular sector having an angle relative to the center of the powered patch smaller than 180°, or each patch of said at least one elementary receiving antenna has a center, said elementary receiving antenna comprising two power supply ports able to power one of the two patches, each port being in an angular sector having an angle relative to the center of the powered patch smaller than 180°.

3. The antenna structure according to claim 1, wherein: the two patches of said at least one elementary emitting antenna are spaced apart in a first direction by a distance comprised between 0.5 millimeters and 2.0 mm, and/or the two patches of said at least one elementary receiving antenna are spaced apart in a first direction by a distance comprised between 0.5 millimeters and 2.0 mm.

4. The antenna structure according to claim 1, wherein: the two patches of said at least one elementary emitting antenna are spaced apart in a first direction by a distance comprised between 0.75 millimeters and 1.5 mm, or the two patches of said at least one elementary receiving antenna are spaced apart in a first direction by a distance comprised between 0.75 millimeters and 1.5 mm.

5. The antenna structure according to claim 1, wherein: diameters of the two patches of

said at least one elementary emitting antenna are identical, or diameter of the two patches of said at least one elementary receiving antenna are identical.

6. The antenna structure according to claim 1, wherein: the elementary emitting antennas of the antenna structure comprise two generally circular patches that are at least partially superimposed, each elementary emitting antenna being dimensioned to emit at least one electromagnetic wave having a frequency comprised between 27 GHz and 31 GHz, or the elementary receiving antennas of the antenna structure all comprise two generally circular patches that are at least partially superimposed, each elementary receiving antenna being dimensioned to receive at least one electromagnetic wave having a frequency comprised between 17.3 GHz and 21.2 GHz.

7. The antenna structure according to claim 1, wherein the elementary emitting antennas and the elementary receiving antennas are arranged in staggered rows.

8. The antenna structure according to claim 1, wherein: the emitting surface is generally rectangular and comprises at least two sets of a plurality of elementary emitting antennas each forming an array, the elementary emitting antennas of each set being along a line specific to that set, each line being parallel to other specific lines, or the receiving surface is generally rectangular and comprises at least two sets of a plurality of elementary receiving antennas each forming an array, the elementary receiving antennas of each set being along a line specific to that set, each line being parallel to the other specific lines.

9. The antenna structure according to claim 1, wherein the telecommunications are satellite telecommunications.

10. A platform comprising at least one antenna structure according to claim 1.

11. The platform according to claim 10, wherein the platform is an aerial platform.

12. A telecommunications method, between two stations comprising the steps of: emitting electromagnetic waves having a frequency comprised between 27 GHz and 31 GHz via an antenna structure according to claim 1; or receiving electromagnetic waves having a frequency comprised between 17.3 GHz and 21.2 GHz via an antenna structure according to claim 1.