CLAIMS

1. A signaling system, comprising a crossable zone intended to be positioned on a highway and comprising a signaling marking forming a plurality of signaling strips, said system being characterized in that:

- The crossable zone comprises a plurality of photovoltaic zones (ZP) comprising photovoltaic cells (Cp) intended to capture light energy in order to convert it into electrical energy;
- The crossable zone comprises a plurality of signaling zones (ZS), of non-zero areas, so as to form said plurality of signaling strips, each signaling zone (ZS) incorporating electrical lighting means;
- A control system for controlling said electrical lighting means;
- At least one storage unit (14) for storing the electrical energy generated by each photovoltaic zone (ZP) and connected to said electrical lighting means in order to supply them with electrical energy;

Wherein the signaling strips are the white strips of the signaling marking and wherein at least two signaling zones are separated by one photovoltaic zone (ZP).

2. The system as claimed in claim 1, characterized in that :

- Each photovoltaic zone (ZP) is composed of at least one slab;
- Each signaling zone (ZS) is composed of at least one luminous signaling slab;
- The slabs forming the photovoltaic zones and the signaling zones are positioned adjacently and contiguously in order to form a functional layer throughout said crossable zone.

3. The system as claimed in claim 2, characterized in that said at least one slab forming each photovoltaic zone (ZP) and said at least one slab forming each signaling zone (ZS) have an identical thickness.

4. The system as claimed in any one of claims 1 to 3, characterized in that the electrical lighting means of a signaling zone (ZS) comprise light-emitting diodes (Ds).

5. The system as claimed in claim 4, characterized in that the light-emitting diodes (Ds) are arranged to delineate the area of the strip to which they belong.

6. The system as claimed in claim 4, characterized in that the light-emitting diodes (Ds) are regularly distributed in order to illuminate all the signaling zone (ZS).

7. The system as claimed in claim 2 or 3, characterized in that the luminous signaling slab (2) is of integral construction and has a structure made up of a plurality of superposed layers that are fastened to one another, said structure being characterized in that it comprises:

- A transparent or translucent first layer (200) forming a front face of said slab;
- A luminous assembly (201) comprising a plurality of light-emitting diodes (Ds) that are electrically connected to one another;
- An encapsulating assembly (202a, 202b) encapsulating said plurality of light-emitting diodes;
- A second layer (203) forming a back face of said slab and composed of a polymer/glass-fiber composite;
- Said encapsulating assembly being positioned between said first layer (200) and said second layer (203).

8. The system as claimed in claim 7, characterized in that each tile of the first layer (200) of the slab is positioned facing at least one light-emitting diode (Ds).

9. The system as claimed in claim 7 or 8, characterized in that the first layer (200) of the slab is made from a polymer chosen from polycarbonate, polymethyl methacrylate, ethylene tetrafluoroethylene and polyvinylidene fluoride.

10. The system as claimed in one of claims 7 to 9, characterized in that the first layer (200) of the slab has a thickness larger than 100 µm, advantageously comprised between 200 µm and 3200 µm and preferably between 400 µm and 750 µm.

11. The system as claimed in one of claims 7 to 10, characterized in that the second layer (203) of the slab has a stiffness defined by a Young’s modulus at room temperature higher than 1 GPa.

12. The system as claimed in one of claims 7 to 11, characterized in that said second layer (203) of the slab has a thickness comprised between 0.3 mm and 3 mm.

13. The system as claimed in one of claims 7 to 12, characterized in that the light-emitting diodes (Ds) are organized in a ribbon deposited on the second layer (203) or on a carrier, or are connected to a printed circuit board.

14. The system as claimed in one of claims 7 to 13, characterized in that said second layer is produced in the form of a printed circuit board to which said light-emitting diodes are connected.

15. The system as claimed in one of claims 7 to 14, characterized in that the encapsulating assembly (202a, 202b) is made from a material having a Young's modulus at room temperature higher than 50 MPa.

16. The system as claimed in one of claims 7 to 15, characterized in that said encapsulating assembly has a thickness comprised between 100 µm and 4 mm and advantageously comprised between 250 µm and 1 mm.

17. The system as claimed in one of claims 7 to 16, characterized in that the multilayer structure comprises at least one intermediate layer (204), arranged between said first layer and the encapsulating assembly and configured to join said first layer to the encapsulating assembly by adhesive bonding.

18. The system as claimed in claim 17, characterized in that said intermediate layer (204) of the slab is made from one or more materials chosen from a polyolefin, rubber, elastomer or epoxy.

19. The system as claimed in claim 17 or 18, characterized in that the intermediate layer (204) of the slab is configured to have a Young's modulus at room temperature lower than or equal to 100 MPa.

20. The system as claimed in one of claims 17 to 19, characterized in that said intermediate layer (204) of the slab has a thickness comprised between 200 µm and 1600 µm.

21. The system as claimed in one of claims 7 to 20, characterized in that said structure comprises an adhesive layer (205) located on the back face, making contact with the second layer.

22. The system as claimed in one of claims 7 to 21, characterized in that said structure comprises a tread (206) applied to said first layer (200), said tread being non-opaque and having a textured and irregular surface

23. The system as claimed in one of claims 1 to 22, characterized in that each photovoltaic zone (ZP) has a multilayer structure.

24. The system as claimed in claim 23, characterized in that said multilayer structure comprises at least one transparent layer (400) making it possible to let a light

flux pass and an encapsulating assembly (402) in which said photovoltaic cells (Cp) are encapsulated.

25. The system as claimed in one of claims 1 to 24, characterized in that it comprises a control and processing unit (15) comprising at least one input connected to presence-detecting means and at least one output connected to said control system for controlling said electrical lighting means;

26. The system as claimed in claim 25, characterized in that the presence-detecting means comprise at least one infrared camera (17).

27. The system as claimed in claim 25 or 26, characterized in that the presence-detecting means comprise at least one photoelectric cell (18).

28. The system as claimed in one of claims 25 to 27, characterized in that the presence-detecting means comprise at least one inductive sensor.

29. The system as claimed in one of claims 25 to 28, characterized in that the presence-detecting means comprise at least one piezoelectric sensor (22) positioned under at least one signaling zone or integrated into said signaling zone.

30. The system as claimed in one of claims 25 to 29, characterized in that it comprises a manual control member (19) connected to one input of the control and processing unit.

31. The system as claimed in one of claims 25 to 30, characterized in that it comprises means (20) for detecting the arrival of a vehicle in proximity to the crossable zone, which means are connected to at least one input of the control and processing unit.

32. The system as claimed in one of claims 25 to 31, characterized in that it comprises a light sensor (21) connected to one input of the control and processing unit and in that the control and processing unit comprises a module for determining the light intensity of each signaling zone (ZS) depending on data received from the light sensor (21).

33. The system as claimed in one of claims 25 to 32, characterized in that it comprises a command sequence (S1, S2, S3) executed by the control and processing unit (15) depending on data received on each input and arranged to determine control signals intended for the control system.

34. The system as claimed in claim 33, characterized in that the command sequence is arranged to command the turn on of the signaling zones (ZS) simultaneously.

35. The system as claimed in claim 33, characterized in that the command sequence is arranged to command the turn on of the signaling zones (ZS) sequentially, one signaling zone after another.

36. The system as claimed in claim 33, characterized in that the command sequence is arranged to command the turn on of the signaling zones (ZS) sequentially, one signaling zone after another, after detection of a presence by said detecting means.

37. The system as claimed in claim 33, characterized in that the command sequence is arranged to command the turn on of each signaling zone (ZS) instantaneously or gradually.

38. The system as claimed in claim 33, characterized in that the command sequence is arranged to command a turn on of the signaling zones gradually in one or more colors taking account of information related to the direction of arrival of a vehicle and/or the speed of a vehicle.

39. The system as claimed in one of claims 1 to 38, characterized in that it consists of a crosswalk system.