CLAIMS

1. A vehicular system which wirelessly communicates with a wireless tag attached to a magnetic marker laid in a road, the system comprising:

a marker detecting part which detects the magnetic marker by sensing magnetism;

a wireless communication part which acquires tag information by executing a communication process with the wireless tag; and

a communication start point setting part which sets a communication start point at which the wireless communication part is caused to start the communication process, wherein

the communication start point setting part sets the communication start point with reference to a time point of detection at which the marker detecting part detects the magnetic marker, and

the wireless communication part is configured to start the communication process by setting a communication period starting from the communication start point and terminate the communication process in a middle of the communication period upon acquisition of the tag information from the wireless tag.

2. The vehicular system according to claim 1, wherein a period from the time point of detection to the communication start point depends on a vehicle speed, which is a speed at which the vehicle travels, and the period is shorter as the vehicle speed is higher and longer as the vehicle speed is lower.

3. The vehicular system according to claim 1 or 2, comprising a forced termination point setting part which sets a forced termination point at which the communication process

by the wireless communication part is terminated, wherein

the wireless communication part is configured to terminate the communication process according to an end of the communication period when the forced termination point is reached, irrespective of whether the tag information is acquired or not, and

the communication period is a period of time ending at the forced termination point, and the time length of the communication period depends on the vehicle speed, and is shorter as the vehicle speed is higher and longer as the vehicle speed is lower.

4. The vehicular system according to any one of claims 1 to 3, wherein the communication process by the wireless communication part includes a power-feeding process for supplying electric power required for operation to the wireless tag.

5. The vehicular system according to any one of claims 1 to 4, wherein the marker detecting part and the wireless communication part are arranged so as to be spaced with a span S in a longitudinal direction of the vehicle with the marker detecting part on a front side, and

the communication start point setting part sets the communication start point based on a time point elapsed from the time point of detection by a time required for the vehicle to travel a distance of the span S.

6. The vehicular system according to any one of claims 1 to 4, wherein the marker detecting part and the wireless communication part are arranged so as to be spaced with a span S in a longitudinal direction of the vehicle with the

marker detecting part on the front side, and

the communication start point setting part sets, as the communication start point, a time point elapsed from the time point of detection by a time required for the vehicle to travel a distance in which a reference distance is subtracted from a distance of the span S.

7. The vehicular system according to any one of claims 1 to 4, wherein a plurality of magnetic markers each with the wireless tag attached thereto are arranged along a longitudinal direction of the road where the vehicle travels, and

the communication start point setting part sets, while the vehicle is traveling along the road, the communication start point based on a time point at which the vehicle reaches a position of a magnetic marker predicted to be detected next after the time point of detection.

8. The vehicular system according to any one of claims 1 to 4, wherein magnetic markers each attached with the wireless tag are arranged with spacing of span M along the longitudinal direction of the road, and

the communication start point setting part sets, as the communication start point, a time point elapsed from the time point of detection by a time required for the vehicle to travel a distance in which a reference distance is subtracted from a distance of the span M.

9. A tag communication method regarding a vehicle including a wireless communication part which performs wireless communication between a marker detecting part for detecting a magnetic marker laid in a road and a wireless tag attached

to the magnetic marker and acquires tag information from the wireless tag, the method for controlling the wireless communication part to cause a communication process to be executed with the wireless tag, the method comprising:

setting a communication period starting from a communication start point with reference to a time point of detection of the magnetic marker at which the wireless communication part is caused to start the communication process, wherein

the wireless communication part terminates the communication process in a middle of the communication period upon acquisition of the tag information from the wireless tag during the communication period, after the communication process has started by reaching the communication start point.

10. The tag communication method according to claim 9, wherein the communication process includes a power-feeding process for supplying electric power required for operation to the wireless tag.

11. The tag communication method according to claim 9 or 10, further comprising

setting a forced termination point to terminate the communication process by the wireless communication part, wherein

the wireless communication part terminates the communication process according to an end of the communication period when the forced termination point is reached, irrespective of whether the tag information is acquired or not, and

the communication period is a period of time ending at the forced termination point, and the time length of the

communication period depends on the vehicle speed, and is shorter as the vehicle speed is higher and longer as the vehicle speed is lower.

12. The tag communication method according to any one of claims 9 to 11, wherein

the marker detecting part and the wireless communication part are arranged so as to be spaced with a span S in a longitudinal direction of the vehicle with the marker detecting part on the front side, and

the communication start point is set as a time point elapsed from the time point of detection by a time required for the vehicle to travel a distance in which a reference distance is subtracted from a distance of the span S.

13. The tag communication method according to any one of claims 9 to 11, wherein

magnetic markers each attached with the wireless tag are arranged with spacing of span M along the longitudinal direction of the road, and

the communication start point is set as a time point elapsed from the time point of detection by a time required for the vehicle to travel a distance in which a reference distance is subtracted from a distance of the span M.