

## CLAIMS

1. A method of detecting a vehicle transacting with a toll system, the method comprising:

detecting, using a sensor of a lane transaction system, a first vehicle transacting with a toll system;

in response to detecting, using the sensor of the lane transaction system, the first vehicle transacting with the toll system, generating a first vehicle lane transaction entry, the first vehicle lane transaction entry designating a toll transaction between the first vehicle and the toll system and being associated with a first vehicle transaction time stamp generated by a clock of the lane transaction system for the toll transaction between the first vehicle and the toll system;

storing the first vehicle lane transaction entry in a lane transaction entry data store, the lane transaction entry data store being configured to store lane transaction entries that designate toll transactions between vehicles and the toll system and that are associated with transaction time stamps generated by the clock of the lane transaction system for the toll transactions between the vehicles and the toll system;

detecting, using a sensor of an image acquisition system, the first vehicle transacting with the toll system, the sensor of the image acquisition system being different from the sensor of the lane transaction system;

in response to detecting, using the sensor of the image acquisition system, the first vehicle transacting with the toll system, generating, using an image capture device of the image acquisition system, a first vehicle picture of the first vehicle transacting with the toll system and generating, using a clock of the image acquisition system, a first vehicle picture time stamp for the first vehicle picture, the clock of the image acquisition system being different from the clock of the lane transaction system;

storing the first vehicle picture in a vehicle image data store, the vehicle image data store being configured to store toll transaction pictures that are associated with picture time stamps generated by the clock of the image acquisition system; and

identifying the first vehicle picture and the first vehicle lane transaction entry as corresponding to a same toll transaction by matching the first vehicle picture with the first vehicle lane transaction entry.

2. The method of claim 1, wherein matching the first vehicle picture with the first vehicle lane transaction entry comprises matching the first vehicle picture time stamp with the first vehicle transaction time stamp.

3. The method of claim 1, further comprising identifying the first vehicle and billing a user associated with the first vehicle a toll fee based on the matching of the first vehicle picture with the first vehicle lane transaction entry.

4. The method of claim 1, wherein the lane transaction entries being associated with the transaction time stamps comprises the lane transaction entries including the transaction time stamps.

5. The method of claim 1, wherein the same toll transaction comprises a violation transaction.

6. The method of claim 1, wherein:  
the first vehicle picture time stamp includes a time of day at which the image acquisition system records, using the clock of the image acquisition system based on a detection of the first vehicle by the sensor of the image acquisition system, occurrence of the first vehicle transacting with the toll system, and

the first vehicle transaction time stamp includes a time of day at which the lane transaction system separately records, using the clock of the lane transaction system based on a separate detection of the first vehicle by the sensor of the lane transaction system, a same occurrence of the first vehicle transacting with the toll system.

7. The method of claim 1, wherein matching the first vehicle picture with the first vehicle lane transaction entry comprises:

selecting a group of the toll transaction pictures stored in the vehicle image data store;

selecting a group of the lane transaction entries stored in the lane transaction entry data store; and

matching the first vehicle picture with the first vehicle lane transaction entry by associating the group of the toll transaction pictures with the group of the lane transaction entries.

8. The method of claim 7, wherein associating the group of the toll transaction pictures with the group of the lane transaction entries comprises associating, on a one-to-one basis, multiple of the toll transaction pictures of the group of the toll transaction pictures with multiple of the lane transaction entries of the group of the lane transaction entries.

9. The method of claim 7, wherein associating the group of the toll transaction pictures with the group of the lane transaction entries comprises associating, on a one-to-one basis, each toll transaction picture in the group of toll transaction pictures with each lane transaction entry in the group of lane transaction entries.

10. A system comprising:

a lane transaction entry data store configured to store lane transaction entries that designate toll transactions between vehicles and a toll system and that are associated with transaction time stamps generated by a clock of a lane transaction system for the toll transactions between the vehicles and the toll system;

a vehicle image data store configured to store toll transaction pictures that are associated with picture time stamps generated by a clock of an image acquisition system;

the lane transaction system that includes a sensor and a clock, and that is configured to:

detect, using the sensor of the lane transaction system, a first vehicle transacting with the toll system,

in response to detecting, using the sensor of the lane transaction system, the first vehicle transacting with the toll system, generate a first vehicle lane transaction entry, the first vehicle lane transaction entry designating a toll transaction between the first vehicle and the toll system and being associated with a first vehicle transaction time stamp generated by the clock of the lane transaction system for the toll transaction between the first vehicle and the toll system, and

store the first vehicle lane transaction entry in the lane transaction entry data store;

the image acquisition system that includes a sensor, an image capture device, and a clock, the sensor of the image acquisition system being different from the sensor of the lane transaction system and the clock of the image acquisition system being different from the clock of the lane transaction system, the image acquisition system being configured to:

detect, using the sensor of the image acquisition system, the first vehicle transacting with the toll system,

in response to detecting, using the sensor of the image acquisition system, the first vehicle transacting with the toll system, generate, using the image capture device, a first vehicle picture of the first vehicle transacting with the toll system and generate, using the clock of the image acquisition system, a first vehicle picture time stamp for the first vehicle picture, and

store the first vehicle picture in the vehicle image data store; and

a processing device configured to identify the first vehicle picture and the first vehicle lane transaction entry as corresponding to a same toll transaction by matching the first vehicle picture with the first vehicle lane transaction entry.

11. The system of claim 10, wherein the processing device is configured to match the first vehicle picture with the first vehicle lane transaction entry by matching the first vehicle picture time stamp with the first vehicle transaction time stamp.

12. The system of claim 10, wherein the processing device is further configured to identify the first vehicle and bill a user associated with the first vehicle a toll fee based on the matching of the first vehicle picture with the first vehicle lane transaction entry.

13. The system of claim 10, wherein the lane transaction entry data store being configured to store lane transaction entries that are associated with transaction time stamps comprises a lane transaction data store being configured to store lane transaction entries that include the transaction time stamps.

14. The system of claim 10, wherein the same toll transaction comprises a violation transaction.

15. The system of claim 10, wherein:  
the first vehicle picture time stamp includes a time of day at which the image acquisition system records, using the clock of the image acquisition system based on a detection of the first vehicle by the sensor of the image acquisition system, occurrence of the first vehicle transacting with the toll system, and

the first vehicle transaction time stamp includes a time of day at which the lane

transaction system separately records, using the clock of the lane transaction system based on a separate detection of the first vehicle by the sensor of the lane transaction system, a same occurrence of the first vehicle transacting with the toll system.

16. The system of claim 10, wherein the processing device being configured to match the first vehicle picture with the first vehicle lane transaction entry comprises the processing device being configured to:

select a group of the toll transaction pictures stored in the vehicle image data store;  
select a group of the lane transaction entries stored in the lane transaction entry data store; and

match the first vehicle picture with the first vehicle lane transaction entry by associating the group of the toll transaction pictures with the group of the lane transaction entries.

17. The system of claim 16, wherein the processing device being configured to associate the group of the toll transaction pictures with the group of the lane transaction entries comprises the processing device being configured to associate, on a one-to-one basis, multiple of the toll transaction pictures of the group of the toll transaction pictures with multiple of the lane transaction entries of the group of the lane transaction entries.

18. The system of claim 16, wherein the processing device being configured to associate the group of the toll transaction pictures with the group of the lane transaction entries comprises the processing device being configured to associate, on a one-to-one basis, each toll transaction picture in the group of toll transaction pictures with each lane transaction entry in the group of lane transaction entries.

19. A non-transitory computer readable storage medium storing instructions executable by a data processing apparatus and upon such execution cause the data processing apparatus to perform operations comprising:

detecting, using a sensor of a lane transaction system, a first vehicle transacting with a toll system;

in response to detecting, using the sensor of the lane transaction system, the first vehicle transacting with the toll system, generating a first vehicle lane transaction entry, the first vehicle lane transaction entry designating a toll transaction between the first vehicle and the toll system and being associated with a first vehicle transaction time stamp

generated by a clock of the lane transaction system for the toll transaction between the first vehicle and the toll system;

storing the first vehicle lane transaction entry in a lane transaction entry data store, the lane transaction entry data store being configured to store lane transaction entries that designate toll transactions between vehicles and the toll system and that are associated with transaction time stamps generated by the clock of the lane transaction system for the toll transactions between the vehicles and the toll system;

detecting, using a sensor of an image acquisition system, the first vehicle transacting with the toll system, the sensor of the image acquisition system being different from the sensor of the lane transaction system;

in response to detecting, using the sensor of the image acquisition system, the first vehicle transacting with the toll system, generating, using an image capture device of the image acquisition system, a first vehicle picture of the first vehicle transacting with the toll system and generating, using a clock of the image acquisition system, a first vehicle picture time stamp for the first vehicle picture, the clock of the image acquisition system being different from the clock of the lane transaction system;

storing the first vehicle picture in a vehicle image data store, the vehicle image data store being configured to store toll transaction pictures that are associated with picture time stamps generated by the clock of the image acquisition system; and

identifying the first vehicle picture and the first vehicle lane transaction entry as corresponding to a same toll transaction by matching the first vehicle picture with the first vehicle lane transaction entry.

20. The computer readable storage medium of claim 19, wherein matching the first vehicle picture with the first vehicle lane transaction entry comprises matching the first vehicle picture time stamp with the first vehicle transaction time stamp.

21. The computer readable storage medium of claim 19, further comprising identifying the first vehicle and billing a user associated with the first vehicle a toll fee based on the matching of the first vehicle picture with the first vehicle lane transaction entry.

22. The computer readable storage medium of claim 19, wherein the lane transaction entries being associated with the transaction time stamps comprises the lane transaction entries including the transaction time stamps.

23. The computer readable storage medium of claim 19, wherein the same toll transaction comprises a violation transaction.

24. The computer readable storage medium of claim 19, wherein:  
the first vehicle picture time stamp includes a time of day at which the image acquisition system records, using the clock of the image acquisition system based on a detection of the first vehicle by the sensor of the image acquisition system, occurrence of the first vehicle transacting with the toll system, and

the first vehicle transaction time stamp includes a time of day at which the lane transaction system separately records, using the clock of the lane transaction system based on a separate detection of the first vehicle by the sensor of the lane transaction system, a same occurrence of the first vehicle transacting with the toll system.

25. The computer readable storage medium of claim 19, wherein matching the first vehicle picture with the first vehicle lane transaction entry comprises:

selecting a group of the toll transaction pictures stored in the vehicle image data store;

selecting a group of the lane transaction entries stored in the lane transaction entry data store; and

matching the first vehicle picture with the first vehicle lane transaction entry by associating the group of the toll transaction pictures with the group of the lane transaction entries.

26. The computer readable storage medium of claim 25, wherein associating the group of the toll transaction pictures with the group of the lane transaction entries comprises associating, on a one-to-one basis, multiple of the toll transaction pictures of the group of the toll transaction pictures with multiple of the lane transaction entries of the group of the lane transaction entries.

27. The computer readable storage medium of claim 25, wherein associating the group of the toll transaction pictures with the group of the lane transaction entries comprises associating, on a one-to-one basis, each toll transaction picture in the group of toll transaction pictures with each lane transaction entry in the group of lane transaction entries.