CLAIMS

1. A computer implemented method for adjusting a virtual camera's orientation when a vehicle is making a turn, the method comprising:

receiving, by one or more computing devices, the vehicle's original heading prior to entering the turn, and the vehicle's projected trajectory;

determining, based on the vehicle's original heading and the vehicle's projected trajectory, by the one or more computing devices, at least one angle of the turn the vehicle is anticipated to perform;

determining, by the one or more computing devices, at least one camera rotation angle based on the at least one angle of the turn the vehicle is anticipated to perform;

adjusting, by one or more computing devices, the virtual camera's orientation relative to the vehicle from an initial orientation to an adjusted orientation by rotating the virtual camera through the at least one camera rotation angle, wherein the adjusting is initiated at a predetermined distance before the vehicle makes the turn; and

generating and displaying, by the one or more computing devices, a video corresponding to the virtual camera's adjusted orientation.

2. The method of claim 1, wherein the vehicle's original heading is received from the vehicle's positioning system and the vehicle's projected trajectory is received from the vehicle's navigation system.

3. The method of claim 1, wherein determining the at least one angle of the turn is determined by calculating a difference between the vehicle's original heading prior to entering the turn and the vehicle's projected trajectory.

4. The method of claim 1, wherein the at least one camera rotation angle is calculated by inputting the at least one angle of the turn the vehicle is anticipated to perform into a squashing function and receiving at least one outputted angle, wherein the at least one outputted angle is the at least one camera rotation angle.

5. The method of claim 1, wherein the displaying of the video is initiated at the predetermined distance before the vehicle makes the turn.

6. The method of claim 1, wherein adjusting the virtual camera's orientation relative to the vehicle comprises rotating the virtual camera's orientation in a direction opposite to the vehicle's projected trajectory.

7. The method of claim 1, wherein the at least one camera rotation angle is determined by accessing a table including predetermined camera rotation angles for each angle of the turn the vehicle is anticipated to perform.

8. A system for adjusting a virtual camera's orientation when a vehicle is making a turn, the system comprising one or more processors configured to:

receive the vehicle's original heading prior to entering the turn and the vehicle's projected trajectory;

determine, based on the vehicle's original heading and the vehicle's projected trajectory, at least one angle of the turn the vehicle is anticipated to perform;

determine at least one camera rotation angle based on the at least one angle of the turn the vehicle is anticipated to perform;

adjust the virtual camera's orientation relative to the vehicle from an initial orientation to an adjusted orientation by rotating the virtual camera through the at least one camera rotation angle, wherein the adjusting is initiated at a predetermined distance before the vehicle makes the turn; and

generate and display a video corresponding to the virtual camera's adjusted orientation.

9. The system of claim 8, wherein the vehicle's original heading is received from the vehicle's positioning system and the vehicle's projected heading is received from the vehicle's navigation system.

10. The system of claim 8, wherein determining the at least one angle of the turn is determined by calculating a difference between the vehicle's original heading prior to entering the turn and from the vehicle's projected trajectory.

11. The system of claim 8, wherein the at least one camera rotation angle is based on the at least one angle of the turn the vehicle is anticipated to perform, and is calculated by inputting the at least one angle of the turn the vehicle is anticipated to perform into a squashing function and receiving at least one outputted angle, wherein the at least one outputted angle is the at least one camera rotation angle.

12. The system of claim 8, wherein the displaying of the video is initiated at the predetermined distance before the vehicle makes the turn.

13. The system of claim 8, wherein adjusting the virtual camera's orientation relative to the vehicle comprises rotating the virtual camera's orientation in a direction opposite to the vehicle's projected trajectory.

14. The method of claim 8, wherein the at least one camera rotation angle is determined by accessing a table including predetermined camera rotation angles for each angle of the turn the vehicle is anticipated to perform.

15. A non-transitory computer readable medium on which instructions are stored, the instructions when executed by one or more processors, cause the one or more processors to perform a method of adjusting a virtual camera's orientation when a vehicle is making a turn, the method comprising:

receiving the vehicle's original heading prior to entering the turn and the vehicle's projected trajectory;

determining, based on the vehicle's original heading and the vehicle's projected trajectory, at least one angle of the turn the vehicle is anticipated to perform;

determining at least one camera rotation angle based on the at least one angle of the turn the vehicle is anticipated to perform;

adjusting the virtual camera's orientation relative to the vehicle from an initial orientation to an adjusted orientation by rotating the virtual camera through the at least one camera rotation angle, wherein the adjusting is initiated at a predetermined distance before the vehicle makes the turn; and

generating and displaying a video corresponding to the virtual camera's updated orientation.

16. The non-transitory computer readable medium of claim 15, wherein the vehicle's original heading is received from the vehicle's positioning system and the vehicle's projected heading is received from the vehicle's navigation system.

17. The non-transitory computer readable medium of claim 15, wherein determining the angle of the turn is determined by calculating a difference between the vehicle's original heading prior to entering the turn and from the vehicle's projected trajectory.

18. The non-transitory computer readable medium of claim 15, wherein the at least one camera rotation angle is based on the at least one angle of the turn the vehicle is anticipated to perform, and is calculated by inputting the at least one angle of the turn the vehicle is anticipated to perform into a squashing function and receiving at least one outputted angle, wherein the at least one outputted angle is the at least one camera rotation angle.