

Search history

Search PN=(WO2018220629) (Results 1)

1:

Search [SP]: 1. a method for simulating a trajectory of a radar target comprising the procedures of: determining a simulated trajectory of said simulated target; determining a simulating vehicle trajectory for a simulating vehicle, said simulating vehicle trajectory being defined according to a simulation profile, said simulation profile at least including a spatial simulation profile and a signal delay profile, said spatial simulation profile including an azimuth simulation profile and an elevation simulation profile; maneuvering said simulating vehicle according to said spatial simulation profile; receiving a radar signal by said simulating vehicle and re-transmitting a signal toward the radar at least according to said signal delay profile. 2. the method according to claim 1, further including the preliminary procedure of determining the location of said radar in a reference coordinate system. 3. the method according to claim 1, wherein said maneuvering said simulating vehicle according to said spatial simulation profile includes determining motion characteristics of said simulating vehicle and determining motion control commands to said simulating vehicle. 4-22. (canceled) 23. the method according to claim 1, wherein said simulation profile further comprises a signal characteristics profile, wherein said re-transmitted signal is further characterized according to said signal characteristics profile wherein said signal characteristics profile includes at least one of: an amplitude profile which defines the amplitude of said re-transmitted signal and a doppler shift profile, which defines a doppler shift of the frequency in the re-transmitted signal. 24. the method according to claim 1, wherein said azimuth simulation profile defines locations of said simulating vehicle, in a reference coordinate system over time wherein said elevation simulation profile defines elevations of said simulating vehicle over time wherein said signal delay profile defines durations the received radar signal is delayed before re-transmitting, over time. 25. the method according to claim 1, wherein said simulating vehicle is an un-manned vehicle selected from a group consisting of: a drone, a remote control boat and a remote control vehicle. 26. the method according to claim 1, wherein said spatial simulation profile includes one of: a list of coordinates and elevation of said simulating vehicle in a referenced coordinate system and a list of coordinates and elevation changes of said simulating vehicle in a referenced coordinate system. 27. the method according to claim 1, wherein said simulating vehicle trajectory is at a range from said radar smaller than the radar minimum detection range. 28. a system for simulating a trajectory of a radar target comprising: a simulating vehicle including: a receiving transducer, receiving a signal from said radar and transforming the received signal to an electric received signal; a receiver, coupled with said receiving transducer, said receiver receiving said electric received signal and at least sampling said electric received signal to produce a sampled received signal; a position detector, for determining a current position of said simulating vehicle; a transmitter, converting a re-transmission signal to an analog signal; a transmitting transducer, coupled with said transmitter, for transforming said analog signal into a transmitted signal; and a processor, coupled with said receiver, with said transmitter and with said position detector, said processor at least including a signal delay, said processor receiving said sampled received signal and producing said re-transmission signal at a delay defined by a signal delay profile, said processor further determining motion characteristics of said simulating vehicle according to a spatial simulation profile and said current position of said simulating vehicle, said spatial simulation profile defining a trajectory of said simulating vehicle, said spatial simulation profile including an azimuth simulation profile and an elevation simulation profile. 29. the system according to claim 28, further comprising a vehicle maneuver controller, coupled with said processor, for determining motion control commands to the vehicle maneuvering controller according to said motion characteristics. 30. the system according to claim 28, wherein said processor further comprises a signal characterizer for characterizing said re-transmitted signal according to a signal characteristics profile wherein said signal characteristics profile includes at least one of: an amplitude profile which defines amplitude of said re-transmitted signal and a doppler shift profile, which defines a doppler shift in the frequency of the re-transmitted signal. 31. the system according to claim 28, wherein said azimuth simulation profile defines locations of the simulating vehicle in a reference coordinate system, over time wherein said elevation simulation profile defines elevations of said simulating vehicle over time wherein said signal delay profile defines durations the received radar signal is delayed before re-transmitting, over time. 32. the system according to claim 28, wherein said receiver comprises an attenuator that attenuates the signals received from said receiving transducer. 33. the system according to claim 28, wherein said simulating vehicle is an un-manned vehicle selected from the group consisting of: a drone, a remote control boat and a remote control vehicle. 34. the system according to claim 28, wherein said spatial simulation profile includes one of: a list of coordinates and elevation of said simulating vehicle in a referenced coordinate system and a list of coordinates and elevation changes of said simulating vehicle in a referenced coordinate system. 35. the system according to claim 28, said simulating vehicle trajectory being at a range from said radar smaller than a radar minimum detection range. (Results 1)

Search [SP]: method and system for simulating a target a method for simulating a trajectory of a radar target includes the procedures of determining a simulated trajectory of the simulated target and determining a simulating vehicle trajectory for a simulating vehicle. the simulating vehicle trajectory is defined according to a simulation profile. the simulation profile at least includes a spatial simulation profile and a signal delay profile. the method further includes the procedures of maneuvering the simulating vehicle according to the spatial simulation profile, receiving a radar signal by the simulating vehicle and retransmitting a signal toward the radar at least according to the signal delay profile. (Results 49)

Search 3 and pd<20170601 (Results 13)

4:

Search FT=(simulat* and (uav or drone)) and PD<=20170601 (Results 2081)

5:

Search TA=(simulat*) and PD<=20170601 (Results 231187)

6:

Search 6 and (uav or drone) (Results 317)

7:

Search 7 and radar (Results 76)

8:

Search 8 and trajec* (Results 21)

9:

1) Family number: 30223590 (US2004030448 AA)

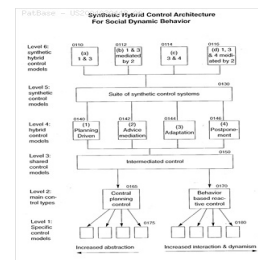
© PatBase

SYSTEM, METHODS AND APPARATUS FOR MANAGING EXTERNAL COMPUTATION AND SENSOR RESOURCES APPLIED TO MOBILE ROBOTIC NETWORK

Abstract: Source: US2004030448 AA In a swarm weapon system including mobile robotic vehicles (MRVs), a system, methods and apparatus are described for the use of external resources, including computation and sensor capabilities, to guide groups of MRVs from position to position in real time. Methods are shown whereby external computation resources provide massive supplementary computing capability to a remote computing network to solve complex problems on the fly that preserves limited intra-systemic power and computation resources. Methods are shown for external sensors, such as satellite sensors, to provide supplemental sensor data to a multi robotic system with resource constraints.

Probable Assignee: SOLOMON RESEARCH LLC

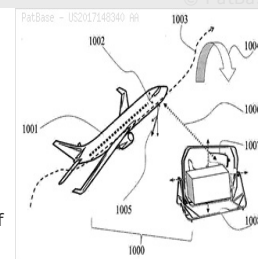
Earliest Publication Date: 20040108



2) Family number: 65760240 (US2017148340 AA)

METHOD AND DEVICE TO IMPROVE THE FLYING ABILITIES OF THE AIRBORNE DEVICES OPERATOR

Abstract: Source: US2017148340 AA A method and device used to improve flying education, and reduce pilot student hazard when passing from **simulators** to the real aircraft, by introducing an intermediary stage where a **simulator** and a model radio-controlled aircraft with similar features as original is used in a system with many participants, an instructor, flight monitors, command center, mission control, audience located remotely and taking part in the same action via internet telecommunication. The **simulator** is used to measure biometric parameters of the pilots, certify them, and also for gaming, having fail-safe procedures embedded. System contains a flight-monitoring network, using both goniometry and **radar** devices, placed on surface and airborne, using these devices as signal repeaters for extensions of communication. The system may be used in missions dangerous to human crews, and by the complexity of **simulation** it improves the flying, as well as to improve the piloting of RC aircrafts.



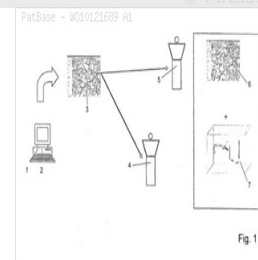
Probable Assignee: POPA SIMIL ANDREI

Earliest Publication Date: 20170525

3) Family number: 47452085 (WO10121689 A1)

SYSTEM FOR DISPLAYING LOCATION AND **SIMULATING** AIR TRAFFIC VOLUME

Abstract: Source: WO10121689 A1 The invention relates to a system for displaying the location and for **simulating** air traffic volume, having the following features: a) a flight plan (3) is created for at least one single flight or at least one single mission in a known manner, b) the data of the flight plan (3) are transmitted to one or more flight safety agencies (4, 5), c) the transmitted data are used in the flight safety agency or agencies (4, 5) for displaying (6) the flight or the mission and for creating a 4-D flight **simulation** (7).

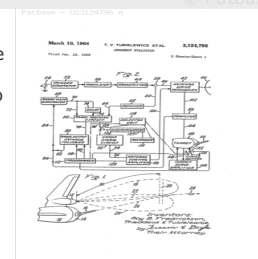


Probable Assignee: CASSIDIAN AIRBORNE SOLUTIONS GMBH

Earliest Publication Date: 20101028

4) Family number: 22303754 (US3124796 A)

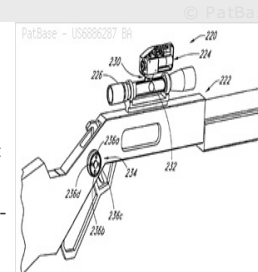
Abstract: Source: US3124796 A (Claim 1) 1. What is claimed as new, and which is desired to be secured by Letters Patent of the United States is: An armament evaluator for use with the fire control system comprising an evaluator device electrically connected with the fire control system, said evaluator device having means for operating the antenna of such system for simulating the tracking of a target, additional means being provided to simulate a variable target range-to the range tracking circuitry of the fire control system, said evaluator device being designed to fire the gun of the fire control system when the simulated target is at the correct range and position for scoring a hit, and including means for obtaining an indication of the closeness of the path of the fired projectile to the area in space where the simulated target is located, whereby the effectiveness of the fire control system may be evaluated.

**Earliest Publication Date:** 19640310

5) Family number: 31869308 (US6886287 BA)

SCOPE ADJUSTMENT METHOD AND APPARATUS

Abstract: Source: US6886287 BA A rifle scope system allows adjustment of the scope while a shooter maintains the shooting posture and the scope sight picture. The scope system comprises an adjustment system comprising an electromechanical mechanism that responds to a signal from a remote controller manipulated by the shooter without having to significantly disturb the shooting posture. The adjustment system allows the shooter to adjust the scope's point of aim to coincide with a bullet's point of impact at a target. Such adjustment can be performed either by the shooter. Alternatively, such adjustment could be performed by a processor configured to adjust the point of aim based on a ballistic parameter associated with the bullet or the shooting environment. The adjustment system allows such processor-determined adjustments to be effected in a quick manner.



Probable Assignee: BELL JOHN C

Earliest Publication Date: 20050503

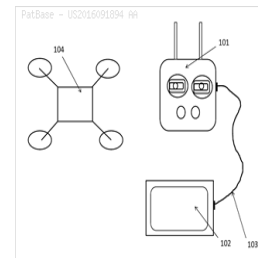
6) Family number: 61997739 (US2016091894 AA)

SYSTEMS AND METHODS FOR FLIGHT SIMULATION

Abstract: Source: US2016091894 AA Systems and methods are provided for training a user to control an unmanned aerial vehicle (UAV) in an environment. The systems and methods provide a **simulation** environment to control a UAV in a virtual environment. The virtual environment closely resembles a real flight environment. The controller used to transmit flight commands and receive flight state data can be used in both **simulation** and flight modes of operation.

Probable Assignee: SZ DJI TECHNOLOGY CO LTD

Earliest Publication Date: 20160331



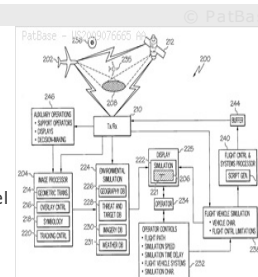
7) Family number: 43006031 (US2009076665 AA)

METHOD AND SYSTEM TO CONTROL OPERATION OF A DEVICE USING AN INTEGRATED **SIMULATION** WITH A TIME SHIFT OPTION

Abstract: Source: US2009076665 AA A method to control a device may include forming an integrated **simulation** model of an actual environment in which the device is or will be operating. The integrated **simulation** model may be formed using pre-existing data and real-time data related to the actual environment. The method may also include presenting a **simulation** including a representation of the device operable in the integrated **simulation** model of the actual environment and allowing control of operation of the **simulation** of the device in the integrated **simulation** model of the actual environment. The method may further include controlling operation of the device in the actual environment using the **simulation** of the representation of the device in the integrated **simulation** model of the actual environment.

Probable Assignee: BOEING CO

Earliest Publication Date: 20090314



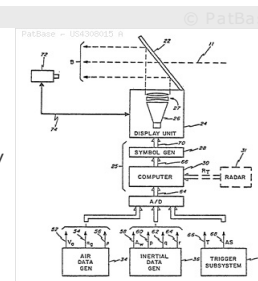
8) Family number: 1405329 (US4308015 A)

SYSTEM AND METHOD FOR AIRCRAFT GUNNERY TRAINING AND ACCURACY EVALUATION

Abstract: Source: US4308015 A A system for aircraft gunnery training and accuracy evaluation wherein a head-up display unit employs a cathode ray tube for projecting **simulated** bullets on a pilot's sighting panel. The **simulated** bullets each comprise a pair of bullet **trajectory** indicia **simulating** the firing of the guns of the aircraft at an actual target. The indicia in a pair of bullet **trajectory** indicia are equidistantly spaced from the **simulated trajectory** path by an amount related to a selected dimension of the target. Each pair of bullet **trajectory** indicia are initially displayed to reflect the physical conditions of the aircraft at the time of firing, including the rates of aircraft roll, pitch and yaw, the aircraft lift acceleration, true aircraft airspeed, gun angle of attack, and relative air density. As the bullet **trajectory** indicia traverse the **simulated trajectory** path, the separation between the indicia comprising a pair of indicia is decreased to **simulate** increasing distance from the firing aircraft. A hit of a target occurs when a pair of bullet **trajectory** indicia are observed to overlies the target and the indicia in the pair are separated by a distance equal to the selected target dimension.

Probable Assignee: BAE SYSTEMS CONTROLS INC

Earliest Publication Date: 19801225



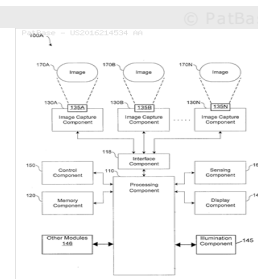
9) Family number: 62338570 (US2016214534 AA)

WATERCRAFT THERMAL MONITORING SYSTEMS AND METHODS

Abstract: Source: US2016214534 AA A watercraft may include a safety system having an imaging component and a control component. The control component may modify the operation of the watercraft based on images from the imaging component. The imaging component may include a thermal imaging component and a non-thermal imaging component. The watercraft may include more than one imaging component disposed around the periphery of the watercraft to monitor a volume surrounding the watercraft for objects in the water such as debris, a person, and/or dock structures. Operating the watercraft based on the images may include operating propulsion and/or steering systems of the watercraft based on a detected object. The control component may operate the propulsion and/or steering systems to disable a propeller when a swimmer is detected, to avoid detected debris, and/or to perform or assist in performing docking maneuvers. The imaging components may include compact thermal imaging modules mounted on or within the hull of the watercraft.

Probable Assignee: FLIR BELGIUM BVBA

Earliest Publication Date: 20160512



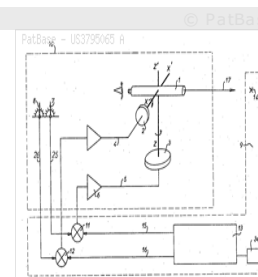
10) Family number: 1683471 (US3795065 A)

DEVICE FOR INTRODUCING IN REAL TARGET OBSERVATION SYSTEMS APPARENT MOTION CHARACTERISTICS QUITE DIFFERENT FROM THE REAL CHARACTERISTICS

Abstract: Source: US3795065 A The present invention relates to a target animator and more particularly to a command mixer operating on a weapon system which substantially includes a sighting telescope movable in elevation and in azimuth responsively to command signals emitted by the aimer, a first input of said mixer receiving said commands and a second input thereof being provided to receive disrupting signals designed to selectively **simulate** varied movements of a target which may be towed or parachuted or even motionless.

Probable Assignee: AEROSPATIALE

Earliest Publication Date: 19730201

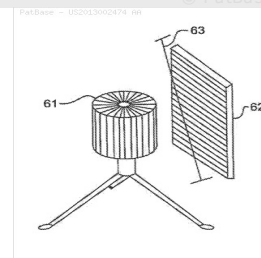


SYSTEMS AND METHODS FOR NEAR FIELD TARGET SIMULATION

Abstract: Source: US2013002474 AA A **simulation** device and a system and method for using the **simulation** device are disclosed. The **simulation** device may contain a plurality of antenna elements positionable on or near a **radar** or other sensing device. The **simulation** device may be configured to control the plurality of antenna elements to transmit signals that **simulate** a reflection of an electromagnetic signal off of one or more targets of particular sizes at particular azimuths, elevations, distances, **trajectories**, and/or velocities.

Probable Assignee: TECHNOLOGY SERVICE CORP

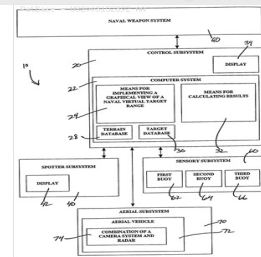
Earliest Publication Date: 20130103

**NAVAL VIRTUAL TARGET RANGE SYSTEM**

Abstract: Source: US2003152892 AA An integrable naval virtual target range system and method provides three-dimensional graphical viewing capabilities of a virtual target range so that naval and fire support personnel can train together during both **simulated** and live fire exercises. The virtual target range system comprises a control subsystem having a computer system and a spotter subsystem for monitoring virtual impact points on the virtual target range. The target system may further comprise a buoy subsystem and/or an aerial vehicle subsystem, for use during live fire exercises, to locate ordnance impact points used for calculating the virtual impact points.

Probable Assignee: UNITED DEFENSE LP

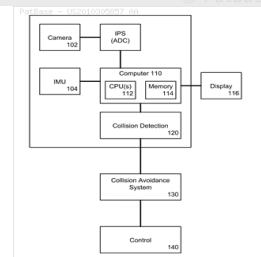
Earliest Publication Date: 20030814

**METHOD AND SYSTEM FOR VISUAL COLLISION DETECTION AND ESTIMATION**

Abstract: Source: US2010305857 AA Collision detection and estimation from a monocular visual sensor is an important enabling technology for safe navigation of small or micro air vehicles in near earth flight. In this paper, we introduce a new approach called expansion segmentation, which simultaneously detects "collision danger regions" of significant positive divergence in inertial aided video, and estimates maximum likelihood time to collision (TTC) in a correspondenceless framework within the danger regions. This approach was motivated from a literature review which showed that existing approaches make strong assumptions about scene structure or camera motion, or pose collision detection without determining obstacle boundaries, both of which limit the operational envelope of a deployable system. Expansion segmentation is based on a new formulation of 6-DOF inertial aided TTC estimation, and a new derivation of a first order TTC uncertainty model due to subpixel quantization error and epipolar geometry uncertainty. Proof of concept results are shown in a custom designed urban flight **simulator** and on operational flight data from a small air vehicle.

Probable Assignee: SCIENT SYSTEMS CO INC

Earliest Publication Date: 20101111

**SYSTEM AND METHOD FOR INJECTING A TARGET IN ACTIVE PHASED ARRAY RADARS**

Abstract: Source: IN03018DE2013 A Embodiment of the present disclosure provides a device and method generation **radar** target **simulation**, including effects of environment disturbances (clutter) and manmade electronic countermeasure (ECM). Signal injection allows the **radar** to be stressed in an electronic environment similar to what will be encounter in the field. This provides high degree of repeatability and flexibility to inject the signal at various points along the signal path to characterize individual sections of the **radar** or to isolate problem areas. Actual **radar** signals are used to evaluate and characterize the **radar** from its RF front end through digital signal processing and **radar** data processor. This is particularly useful when verifying and stressing signal processing and tracking loop algorithms. Also, an improved calibrating phase array **radar** system for maintaining an accurate phase response in the transmit path from the exciter to each antenna element in the active array phase **radar**. Figure 4

Probable Assignee: DIRECTOR GENERAL DEFENCE RES AND DEV ORGANISATION DRDO

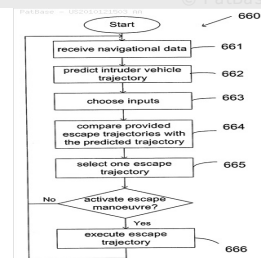
Earliest Publication Date: 20150417

COLLISION AVOIDANCE SYSTEM AND A METHOD FOR DETERMINING AN ESCAPE MANOEUVRE TRAJECTORY FOR COLLISION AVOIDANCE

Abstract: Source: US2010121503 AA A collision avoidance system including a receiver configured to receive navigational data regarding intruding aerial vehicle and own aircraft. Storage is configured to store a plurality of predefined escape **trajectories**. A processor is configured to compare at least a subset of the predefined escape **trajectories** with a presumed **trajectory** of the intruding aerial vehicle and to select one of the predefined escape **trajectories** based on the comparison. The predefined escape **trajectories** are pre-**simulated**, wherein each escape **trajectory** is associated to a set of navigational data and to an escape manoeuvre direction.

Probable Assignee: SAAB AB

Earliest Publication Date: 20100513

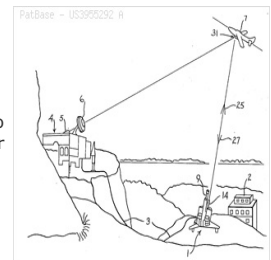


APPARATUS FOR ANTI-AIRCRAFT GUNNERY PRACTICE WITH LASER EMISSIONS

Abstract: Source: US3955292 A Each gun of an anti-aircraft battery has a unit comprising a laser and a coaxial radiation detector, the axis of the unit being near and parallel to that of the gun barrel. An instrument center, spaced from the guns and controlling their aim, comprises a central sight for target tracking and means for calculating an aiming-off point at which the guns should be aimed when firing real projectiles. For laser practice, projectile flight time is set equal to zero by a switch at the center, so that with correct firing preparations each gun points to a tracked target for detection of laser emissions reflected from it. The laser emits a pulse train for each shot. Hits are scored only on detected trains having a predetermined minimum number of pulses, and scoring is weighted according to error probabilities that would affect real hit results.

Probable Assignee: SAAB SCANIA AB

Earliest Publication Date: 19750314



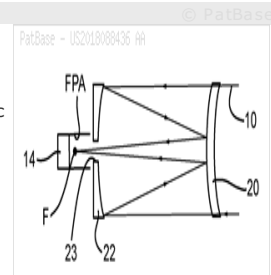
17) Family number: 59603472 (US2018088436 AA)

LONG RANGE SENSOR APPARATUS AND METHOD OF PROVIDING A LONG RANGE SENSOR APPARATUS

Abstract: Source: US2018088436 AA A long range electromagnetic radiation sensor apparatus comprising a sensing system for receiving electromagnetic radiation signals from an object or area of interest and at least one electromagnetic radiation sensor, the apparatus further comprising an electromagnetic radiation source and a control system configured to cause electromagnetic radiation from said source to be applied to a selected plurality of three-dimensional portions of an atmospheric volume between said optical system and said object or area of interest (204) so as to heat and/or ionize the air within said portions, wherein said selected portions are spatially located together in a three-dimensional configuration so as to **simulate** an electromagnetic radiation path modifying device (202) for capturing said electromagnetic signals from said object or area of interest and directing and/or converging said captured signals toward said electromagnetic radiation sensor of said sensing system.

Probable Assignee: BAE SYSTEMS PLC

Earliest Publication Date: 20161012



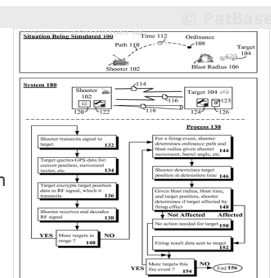
18) Family number: 50210440 (US2011311949 AA)

TRAJECTORY SIMULATION SYSTEM UTILIZING DYNAMIC TARGET FEEDBACK THAT PROVIDES TARGET POSITION AND MOVEMENT DATA

Abstract: Source: US2011311949 AA A target in a physical environment can be interrogated. Feedback can be received from the target that is encoded within a radio frequency signal. The feedback can include position and movement data of the target. Adjustments can be calculated for a **simulated** kinetic projectile traveling to the target. The adjustments can account for target movement, kinetic projectile travel time, and travel path to the target. A distance from a point of origin of the **simulated** kinetic projectile to the target and movement of the target relative to the point of origin can be determined utilizing the feedback. A result signal can be conveyed that includes result data. The result data can include all information necessary for the target to react to the **simulated** kinetic projectile.

Probable Assignee: LOCKHEED MARTIN CORP

Earliest Publication Date: 20111222



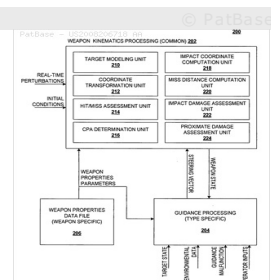
19) Family number: 42121160 (US2008206718 AA)

APPARATUS, METHOD AND COMPUTER PROGRAM PRODUCT FOR WEAPON FLYOUT MODELING AND TARGET DAMAGE ASSESSMENT

Abstract: Source: US2008206718 AA A weapon flyout **simulation** method, system, and computer program product, includes modeling a target as a plurality of ellipsoidal zones corresponding to a plurality of zones on the target, and performing hit/miss assessment on the target by determining if said **trajectory** of the weapon interferes with at least one of said plurality of ellipsoids.

Probable Assignee: AAI CORP

Earliest Publication Date: 20080828



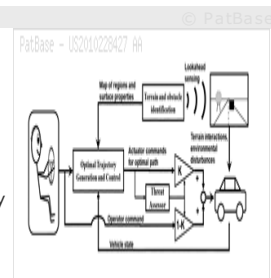
20) Family number: 46804192 (US2010228427 AA)

PREDICTIVE SEMI-AUTONOMOUS VEHICLE NAVIGATION SYSTEM

Abstract: Source: US2010228427 AA An active safety framework performs **trajectory** planning, threat assessment, and semi-autonomous control of passenger vehicles in a unified, optimal fashion. The vehicle navigation task is formulated as a constrained optimal control problem. A predictive, model-based controller iteratively plans an optimal or best-case vehicle **trajectory** through the constrained corridor. This best-case scenario is used to establish the minimum threat posed to the vehicle given its current state, current and past driver inputs/performance, and environmental conditions. Based on this threat assessment, the level of controller intervention required to prevent collisions or instability is calculated and driver/controller inputs are scaled accordingly. This approach minimizes controller intervention while ensuring that the vehicle does not depart from a traversable corridor. It also provides a unified architecture into which various vehicle models, actuation modes, **trajectory** -planning objectives, driver preferences, and levels of autonomy can be seamlessly integrated without changing the underlying controller structure.

Probable Assignee: MASSACHUSETTS INST OF TECHNOLOGY

Earliest Publication Date: 20100909



21) Family number: 34969847 (US2007182812 AA)

PANORAMIC IMAGE-BASED VIRTUAL REALITY/TELEPRESENCE AUDIO-VISUAL SYSTEM AND METHOD

Abstract: Source: US2007182812 AA A panoramic system comprises means for obtaining a panoramic image, and means for displaying the panoramic image.

Probable Assignee: VIRTUAL VIDEO REALITY BY RITCHEY LLC

Earliest Publication Date: 20070809

