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AN_WPI: 201926338D

TI_WPI: Personal smart gun device for personal defense and/or attack purposes, has processor, internal memory and rechargeable battery for controlling use of guns, where device is used with related accessories, and

AB_WPI: NOVELTY: The device has a processor, an internal memory and a rechargeable battery for controlling a use of guns, where the device is used with related accessories. Gun bullet-safe insertion/removal sensor and a gun hand grip sensor (120) are provided with software to control and regulate a gun authorization, where a smart control of the guns is provided with a right and/or left finger-print authorization coding, a smart control of a Bluetooth is provided with right and left buttons with coding in the guns. Wireless Fidelity (Wi-Fi) location sources are recognized only by the guns.

USE: Personal smart gun device (PSG) for personal defense and/or attack purposes.

ADVANTAGE: The device allows a gun manufacturer to find a way to electronically activate a gun's lock, locks a trigger and prevents shooting in a locked position if a bullet is already loaded in a shooting track.

DESCRIPTION OF DRAWINGS: The drawing shows a schematic block diagram of a PSG-Device.

101 := Metal case of component

102 := Laser object distance sensor

104 := Light sensor

107 := Laser aiming beam

109 := Infra-red flash light

120 := Gun hand grip sensor

IW_WPI: PERSON SMART GUN DEVICE ATTACK PURPOSE PROCESSOR INTERNAL MEMORY RECHARGE BATTERY CONTROL RELATED ACCESSORY

DC_WPI: Q79, T01, W01, W07

MC_WPI: Q79T01B, Q79T10, T01C03C, T01D02, T01J07D3, T01J12C, W01A06C4E, W07J03

[FR]DISPOSITIF DE PISTOLET INTELLIGENT PERSONNEL (DISPOSITIF PSG) ET ACCESSOIRES À USAGE CIVIL ET NON CIVIL

[EN]PERSONAL SMART GUN DEVICE (PSG-DEVICE) AND ACCESSORIES FOR CIVIL & NON-CIVIL USE

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Personal Smart Gun Device (PSG-Device)

And Accessories

For Civil & Non-Civil Use

Technical Field:

1. Gun Industry.
2. Electronics (Tele-communications, Video recording, Sensors... etc) Industry
3. LaserTechnologyIndustry
4. IT (Information Technology) Industry

Background Art:

Guns are here and there all over the world and used for personal defense or attack purposes. The use of guns is controlled by specific laws and regulations that differ from one country to the other.

Problem and Defect in Prior Art:

Guns up till now are NOT Fully PERSONAL so that No One can be sure that this person had used this gun at this time in this location for defense or to attach this target intentionally to injure or to kill or just accidentally except after detailed investigations that may even end without sharp demarcation.

Disclosure of Invention:

Personal Smart Gun Device (PSG-Device) is a device to be added in a built-in form to any gun to personalize it. With PSG-Device it could be accurately documented who had used which gun, when, where, how, for defending or for attacking or just by accident and the shooting was aiming to injure or to kill. PSG-Device could be added to an automatic rifle gun, to a sniper gun, to a short gun (pistol) or to any other gun. The specific design will be different according to the dimensions of each gun of each manufacturer, but the principle is the same with some additional features in some guns

according to the function and use. The full description will be described for the short gun (pistol) to document all the components and features. However, additional components and features for other gun types will be described separately.

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The full specifications described below are mainly for Guns with PSG-Devices for Civil Use.

For Non-Civil Use, PSG-devices' contents and software would be customized specifically according to the requirements requested by each party as they may ask for less features in some aspects to be less costly. However, some accessories are for Non-Civil Use

The PSG-Device is to be attached below the Gun Rifled Tube (GRT) near to the moving parts.

Externally (Fig. 1 & 2) it contains:

1. Metal Case of Components (MCC) to keep all the components. It is made of strong metal alloy like the gun itself and the external components are attached to it in a Water-Proof and Fire-Resistant (as much fire-proof as possible) attachment and all the internal components are attached to it in a shock-proof heat-resistant attachment.
2. Laser Object Distance Sensor (LODS) aligned with optical axis parallel to the axis of the gun rifled tube (GRT). It uses the pulsed laser aiming beam (Pulsed LAB) as the outgoing laser. With the auto-adjusted LAB, It utilizes almost the same path (will be described with the LAB). It shows externally apart from Laser Aiming Beam (LAB) Grade 3 Only.
3. Hi Definition Auto-Focus Auto-Zoom Video Camera (HDAFAZVC) aligned with its optical axis parallel to the axis of the gun rifled tube (GRT). Video (from both cameras) and Sound Recording as well as Laser Aiming Beam (LAB) and LODS are activated by Finger Print Authorization. If the software can't detect clear image, authorization is never complete.
4. Light Sensor for HDAFAZVC (LSZC) to detect illumination intensity.
5. Hi Definition Auto focus Wide Angle Video Camera (HDAFWAVC) aligned with its optical axis parallel to the axis of the gun rifled tube (GRT). Video Recording is activated in combination of HDAFAZVC.
6. Light Sensor for HDAFWAVC (LSWC) to detect illumination intensity.
7. Laser Aiming Beam (LAB) - (Seven Different Grades that will be described separately).
8. Hi Sensitive Microphone Sensor (HSMS) behind a short capillary tube coated with hydrophobic coating so that water can't pass in if the gun accidentally immersed in water. Its function is to record any surrounding sound including the shooting sound.
9. Infra-Red Flash Light (IRFL). It is activated in very low illumination so that the video recording is converted to a night vision one. It could be combined with LED visible flash light on demand.
10. Electronically Activated Lock with Sensor (EAL/EALS) - Right & Left that when activated can Lock/Unlock the gun's moving parts. The importance of its sensor is to ensure the lock integrity in order to keep the gun-use restricted to one (or more) authorized person under strict control. In case this lock is broken the LAB is automatically deflected to mislead any unauthorized user. This could be done by the aid of two equal prisms aligned vertically apex to base in the primary position so that they

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have together No prismatic effect. Once the EAL is broken, the base up prism is activated to rotate 180° so that both prisms become base down and cause downwards deflection of LAB by 20° or more OR it could be done by the extra downward inclination of the movable inclinable reflecting mirror if available in the design. In such case, the Laser Aiming Beam (LAB) auto-correction software stops working. If the gun with broken EAL is used by an authorized user, the LAB is well aligned again but he has to get authorization before shooting with each newly loaded Bullet-Safe and to keep his hand grip all over the shooting. Each gun manufacturer should find a way to electronically activate his gun's lock, designed specifically to his gun design, to lock the trigger as well to prevent shooting in the locked position if a bullet is already loaded in shooting track.

11. Right Finger-Print Sensor (RFPS). For On/Authorization for the authorized person (s) using the RIGHT index finger print for right-handed people to shoot with One Bullet-Safe (Holder) with continuous grip and for Left-handed people to shoot with Several Bullet-Saves (Holders) with continuous grip. Bilateral Long Continuous Press puts the PSG-Device back to the stand-by status, gives a long vibration signal, locks it and sends copies of records. More custom programming could be done. Authorization Programming is an Official Legal Process to be done ONLY by the Weapon Licensing Official Authorities (Subject to Approval) in which full Finger Print record, Voice record, on-spot Photography, address, telephone numbers, email as well as official ID copy records are linked to the PSG-Device IP number and Serial number of the weapon to generate one unified International Gun User Reference Number (I-GURN) for the user. One I-GURN is generated for each user even if he has multiple guns or multiple nationalities. Copies of Authorization Finger Prints, Recent Photo (s), I-GURN and IDs of the Authorized Person (s) are stored in the Internal Memory of the PSG-Device. It will take few seconds from starting authorization to start shooting. These few seconds could be precious and may be considered time loss. On the other hand, these few seconds are very vital and may save lots of lives as it gives time for thinking. An angry shooter may change his mind as he knows that everything is being recorded and documented.

12. Left Finger-Print Sensor (LFPS). For On/Authorization for the authorized person (s) using the LEFT index finger print for Left-handed people to shoot with One Bullet-Safe (Holder) with continuous grip and for Right-handed people to shoot with Several Bullet-Saves (Holders) with continuous grip. Bilateral Long Continuous Press puts the PSG-Device back to the stand-by status, gives a long vibration signal, locks it and sends copies of records. More custom programming could be done.

13. Right Bluetooth Button (RBTB). For Left-Handed people, Right BTB is used to activate search and BT coupling with other devices in the stand-by status i.e. PSG-Device is already on but not activated for shooting. Authorization for coupling is done by entering the BT code of the PSG-Device to the other device (mobile cell phone or computer for example). For Right-Handed people, Right BTB is used to send the Last Video Recording to the already coupled device then the previous then the previous with each

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press and so on. A vibration signal ensures that sending a video record is completed. Preprogramming for right or left handedness is to be done at the set up. BT is for sending Only and programmed for Not to receive.

14. Left Bluetooth Button (LBTB). For Right-Handed people, Left BTB is used to activate search and BT coupling with other devices in the stand-by status i.e. PSG-Device is already on but not activated for shooting. Authorization for coupling is done by entering the BT code of the PSG-Device to the

other device (mobile cell phone or computer for example). For Left-Handed people, Left BTB is used to send the Last Video Recording to the already coupled device then the previous then the previous with each press and so on. A vibration signal ensures that sending a video record is completed. Pre-Programming is to be done at the set up. Bilateral pressing of the BTB can start Temporary Emergency Authorization (TEA) process in the presence of Wi-Fi or data network with a long vibration signal. Then, simultaneous repeated touching of the RFPS with right index and LFPS with the left index until finger prints are recognized by the Manufacturer's server for international users and/or by local authorities' server for local users but Only if the temporary user is already having I-GURN. TEA is valid only for 24 hours and the temporary user accompanying the used gun has to report to the local authorities within 48 hours with acceptable excuse for it. If TEA is made by the manufacturer's server, it has to immediately report to the local authorities' server with temporary user's I-GLTRN and ID copies. PSG-Device IP. Gun serial number, local time and GPS location of TEA. In case the local authorities' server is the one to give TEA, the reverse reporting should happen immediately as well.

15. Stand-By Emergency Charging/Data Port (SBECDP). To be used only at the time of official authorization programming or official legal investigation.

16. SBECDP Cover (SBECDP-C) secured with two (or more) screws in a water proof fitting.

17. Right & Left Charging Plates (RLCP). For charging when it comes in contact with the charging buds of the charger. Wireless charging is available too.

18. Magnetic Charging Port (MCP) for magnetic wired charging.

19. Bullet-Safe Insertion/Removal Sensor (BSIRS). If authorization is for shooting with only one bullet-Safe, repeated finger-print authorization is required after each bullet-safe insertion. If authorization is for multi bullet-safe use, authorization is continuous regardless the number of bullet-saves replaced so long the hand grip is continuous.

20. Grip Sensor (GS). A new Finger Print Authorization is required to activate the gun if grip was released. GS should realize continuous grip to continue the authorization to ensure authorized use all the time.

N.B.:

• The anterior ends of all external optical components (e.g. video camera) are made of flat hard anti-scratch glass so that optical systems will still work if accidentally immersed under water. Protective glass plate, with a small fenestration for HSMS, could be added

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to cover all. This protective glass should be removed immediately if damaged. It could be replaced later at ease.

• In case of small-sized guns with restricted potential space for PSG-Device, one FPS and one BTB on one side as well as more compact components are to be used to save space. Necessary software programming change is mandatory.

Laser Aiming Beam (LAB) Grades (fig. 3A & 3B):

1. Simple continuous LAB that guides shooting ALMOST ONLY in Gun's Upright Position. No LODS. It crosses the shot's path at the effective distance (e.g. 50m.) but without any special sign. It assists the shooter's experience with some guidance.

2. Color-coded double continuous LABs that guides shooting MAINLY in Gun's Upright Position. No LODS. The two LABs are located on the same level horizontally with Red LAB on the Right and Green LAB on the Left. The two LABs meet at the effective distance (e.g. 50m.) with the calculated downwards displacement for the distance. When the camera software recognizes the two LABs overlapping at the target it gives double vibration signal. Beyond the effective distance the colors become reversed (Red to Left side) and when the camera software recognizes color reversal at the target it gives a single vibration signal.

3. Pulsed LAB meeting the shot's path at the effective distance (e.g. 50m.) with Laser Object Distance Sensor (LODS) utilizing separate frontal port and Vibration Signals that guides shooting MAINLY in Gun's Upright Position. This could be simple or utilizing a fixed 45° reflecting mirror and a movable inclined mirror for intended downwards deviation of LAB in case the EAL is broken to mislead the un-authorized user. Normally, it is also inclined at 45°.

4. Pulsed LAB with Laser Object Distance Sensor (LODS), Vertical Accurate Adjustment by auto correction software according to object distance, a fixed at 45° inclined mirror around the horizontal axis at right angles with anterior-posterior axis and an Inclined Moving Mirror rotating around a horizontal axis at right angles with the anterior-posterior axis with accurate guidance in the Gun's Upright or Vertically Inverted Positions (like emergency shooting to backwards from above the shoulder with the aid of the Vision Stick) and Vibration Signals. One degree of mirror rotation results in two degrees of LAB rotation. LAB and LODS utilize the same frontal port and utilize the same path (co-axial but opposite directions) till the LODS path is separated by two parallel transparent glass plates.

5. Pulsed LAB with LODS, Vertical Accurate Adjustment by auto correction software according to object distance, a fixed at 45° inclined mirror around the horizontal axis at right angles with anterior-posterior axis and an Inclined Moving Mirror rotating around a horizontal axis and always at right angles with the vertical axis and a rotational movement of the inclined mirror around the vertical axis in right angles with anterior-

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posterior axis with accurate guidance in All Gun's Spatial Positions and with Vibration Signals. Pulsed LAB and LODS are co-axial utilizing the same path but opposite direction till separated by two parallel transparent glass plates.

6. Pulsed LAB with LODS, Vertical Accurate Adjustment in All Gun's Spatial Positions (like grade 5), Shot Site Location/Error Detection Software and Auto-Adjustment to counteract the wind effect as well as Vibration Signals. Best for sniper guns (especially if utilizes invisible Pulsed LAB that can be detected only by its cameras and with special telescopes).

7. Sophisticated Pulsed LAB with LODS, Vertical Accurate Adjustment in All Gun's Spatial Positions, Shot Site Location/Error Detection Software and Auto-Adjustment to counteract the wind effect (like grade 6), Object Relative Position and Speed Detection software in relation to Gun's Position and Speed with auto adjustment software to counteract the Target's movement and Gun's movement as well as Vibration Signals so that shooting can be done in high accuracy from fixed or movement status to a fixed or moving target.

N.B.: From 4 to 7 the path of LODS is co-axial with the path of the Pulsed LAB with the aid of two parallel transparent glass plates. The Pulsed LAB could be either Visible, Non-Visible light waves that requires special goggles/telescopes or Dual (Fig.). Dual LAB PSG-Devices could be feasible only in big PSGs as it requires good space and could be provided with additional button to switch easily between the two types (PSGs for civil use are provided only with visible LAB. Only PSGs for non-civil use could be provided with non-visible LAB).

The Internal Components (Shock Proof - Heat Resistant) (Fig. 4):

1. Mother Board (MB) via which all the electronic and electric external and internal components are connected.

2. Hi Speed Multi Core Processor (HSMCP) with operating software (could be android or any other according to manufacturer preference). Custom software is to be prepared for immediate automatic sending of any recorded videos (later, it could be upgraded for real time or live sending of the videos) to servers of manufacturer and local authorities (police) with all the details. Custom software is to be developed to recognize human shootings from videos so that after sending copies of the videos it silently continue to send the PSG-Device IP, Gun serial number, user's name & I-GURN, reference of the video sent and the new GPS location every half an hour by Wi-Fi or mobile data network (or every one hour by SMS in case there was no Wi-Fi or network data signals) to facilitate finding the gun in case it was hidden. By law, the shooter himself should report to the nearest police station accompanying his gun within 48 hours from shooting in case there was suspected human injury.

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3. Dual Camera Processor (DCP) with compatible operating software so that the two cameras can start to video recording-ready status fast in case the PSG-Device is started from off status to stand-by status then to authorized status (subject to compatibility and manufacturer preference) so that the total refractory or start-up time is shortened.

4. Internal Memory (IM) for the system operating software, authorized personnel personal data storage as well as video recordings' storage.

5. RAM(RAM).

6. SIM Card Drive & Slot (SCDS) to send SMS with Information/Location and to use network data in case there is NO nearby free or recognized Wi-Fi. Date, time and time zone are set automatically in 24 hours form (not 12 hours form to avoid confusion) through the network. As there is limited space, Nano-SIM Card would be the preferred form.

7. Micro SD Card Drive & Slot (MSDCDS), that supports up to 2 TB Micro SD card, for backup of data.

8. Bluetooth(BT).

9. Wi-Fi (Wi-Fi) to utilize free or recognized Wi-Fi for immediate (or ASAP) sending of copies of recorded videos to the Manufacturer Server (for Official Neutral Legal Reports) as well as to the Local Authorities or Police Server (for Local Official Notification & Legal Reports) as well as a copy to the authorized user's online account for his personal reference if he requested this at time of Official Authorization Programming. Each video is to be sent with the local time from its beginning to its end, PSG-Device IP and Weapon Serial Number together with GPS Location of recorded video scene at shooting (with tilt, direction in space and angle of shooting), GPS Location at time of sending, Authorizing User's finger print (the one used for authorization), name, I-GURN, photo and IDs copies each time for each video for legal purposes. The local authorities should provide PSG-Device recognized free Wi-Fi in many public places and with each Police Patrol Car or Motorcycle. In case the video could not be sent successfully to manufacturer and police servers, copies are sent temporarily by Wi-Fi to nearest PSG-Devices so that these copies will be kept temporarily till sending it to servers once one of these PSG-Devices is connected to free or recognized Wi-Fi. A PSG software for mobile cell phones could be downloaded by PSG users to their mobiles so that they can get notifications through it as well as it copies all stored active Wi-Fi user names and passwords (with their effective approximate locations) in their cell phones and send it to manufacturer's server so that it will be downloaded with updates to PSGs according to geographical location (same country) for all PSGs (ONLY PSGs) to use as much as Wi-Fi sources as possible in an online cooperation agreement treaty within terms and conditions of use for PSG mobile software.

10. Vibrator (VIB) gives sensational signal to the hand of the authorized user once PSG-Device is on from off status or it is activated from stand-by status. When the software of video analysis recognizes a human, an animal or a moving object for the first time in the

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scene, it gives a treble vibration signal. When the target is recognized by color coding or by the LODS to be within $\pm 1m$. from the effective distance (for example 50m. for some guns), it give double vibration signal. If it is beyond the effective distance (for example $>51m.$), it gives one vibration signal. Additional single long (relatively) vibration signal will come after auto-correction of LAB for the distance, position, tilt and speed. Another additional single long (relatively) vibration signal will come after shot location/error recognition and LAB auto-correction to compensate for errors because of wind or speed or both (i.e. Coded Vibration Signals).

11. GPS Location/Speed Sensor (GPSLSS). It is important during shooting from movement and to define the location of shooting for Legal Purposes.

12. Compass (CMP) to detect and document the direction of shooting.

13. Spatial Position Sensor (SPS) to detect and document the gun's spatial position.

14. Shock/Vibration Sensor (SVS). Together with the video and sound recording, it is important to document shootings.

15. Long-Life Multi-Cell Battery with Over-Charge Prevention (LLMCB)

16. Wired /Wireless Charger (WWLC) to receive charging power and regulate charging the battery.

17. Connections between MB and external components.

Accessories (Fig. 5 A, 5B & 5C):

1. New international Code (e.g.: +999) for SIM card numbers is used in PSG-Devices so that it is agreed internationally to treat it with local fare in using the local line and data (internet) network. Before the international agreement, it is treated on roaming fare basis and the manufacturer can make agreements with each country's network providers for usage fare.

2. Carry-Case with Power Bank & Right/Left Charging Buds (CC/PBRLCB).

3. Carry-Case with Power Bank &Wireless Charger (CC/PBWC).

4. Carry-Case with power Bank, Wireless Charger & self-retracting Charging Magnetic Cable (CC/PBWC/CMC).

5. Charger for Carry-Case Power Bank (C/CCPB).

6. Car Charger for Carry-Case Power Bank (CC/CCPB).

7. Wireless Charging Pad for a disk drawer (WCP).

8. Car Charging Case (CCC).

9. Silencer Extension of Gun Rifled Tube (SE/GRT).

10. Vision Stick that utilizes the Mobile Cell Phone Screen (or with built-in rotatable, or better, fixed screen that could be rectangular or better overall pear-shaped with two unequal rounded screens, the bigger is for the chosen scene to observe and the smaller for the wide angle opposite direction, with the necessary hardware and software) to observe the scene from behind protection. This is an expandable stick with front two HD video

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Cameras (Zoom and Wide Angle) and backwards HD Wide Angle video Camera at right angles with the stick with a fixed or rotatable secured mobile cell phone holder, a controller handle to switch between cameras as well as zoom activation, a central control station, a fore-arm gentle holder, a power bank as well as wired connection to connect the video Cams to the cell phone as well as charging it and a charger. It could be used alone with the PSG or it could be attached to a protective shield to fight and being protected while in mobility. Live Wi-Fi communication between PSG and a mobile phone screen (or a specially designed screen device) to utilize the PSG cameras for real time scene screening and viewing could be prepared by software programming. However, this is **ABSOLUTELY NOT** advisable as it will consume the battery charge very fast leading to rapid PSG failure.

11. Auto-Sniper base that holds a sniper gun and able to shoot automatically or under the control of an operator. It has a high definition telescopic auto-focus auto-zoom video camera (HDTAFZVC) capable to detect invisible Pulsed LAB and capable of night-vision with its optical axis parallel to the axis of the gun's rifled tube and aligned above it as well as a high definition auto-focus wide angle video camera (HDAFWAVC) capable to detect invisible Pulsed LAB and capable also of night vision to scan the field to spot targets. The base can rotate around the vertical axis and the sniper gun carrier is motorized to be inclinable around the horizontal axis and attached to the rotating base from one side. The gun carrier is provided with a shock-absorber to counteract the rebound movement after each shooting. The HDTAFZVC spot and track the target (special software) then align the spot of the LAB to the target (could start with a false target to allow for shot location/error recognition and LAB auto-correction for the wind and movement) and re-align the LAB spot to the target after shot location error recognition and auto-correction. It should be provided with a Vibration Sensor to detect PSG vibration after LAB auto-correction. The base is better fixed to a superior attachment which could be either fixed like a ceiling or a side arm from a tower or it could be mobile like a remote-control vertical aircraft. Its bullet safe should allow a good number of bullets (e.g. in a tape form). The sniper gun itself is provided with a silencer. The response center (with the necessary hardware, software and custom software) could be either in the control room or better in the auto-sniper unit for shorter reaction time. However, full automatism is NOT advisable and a supreme control should be kept in the control rooms to choose targets, when to shoot and when NOT to shoot. Electronically activated trigger activator is connected to the base and fixed to the trigger parts of the gun for shooting. Sniper guns with built-in e-activated trigger activator could be made. It is better to have specially made sniper gun to be built-in to the auto-sniper base with direct hardware and software communication for shorter reaction time and less errors.

12. Inclined Moving Mirror for Security Observation Camera without or with manual or automatic Target Tracking Software. Inclination is around a transverse axis at right angles to the optical axis of the observing HD video camera. The camera itself can rotate

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around its own optical axis. At 45° of inclination the optical path of the camera is deviated by reflection 90°. Change of inclination in either direction by θ results in change of observation path direction by 2° in the same direction. This results in faster scanning of the observed field with additional energy saving (change of mirror inclination takes much less energy than moving the whole camera) and when it is multiplied by the total number of security cameras, the energy saving is considerable. A third advantage is that the camera itself could be hidden and only the mirror is used for observation and could be easily hidden by different shapes of decoration. A fourth advantage is that the expensive camera is hidden and protected and in case the exposed part is damaged for some reason, it is only a mirror and could be easily replaced. However, using the inclined mirror leads to image reversal. If it is required to have faster vertical field scanning, the camera is mounted vertically with its 12 o'clock position is aligned towards the highest part of the inclined mirror to compensate for image reversal. If faster horizontal scanning of the observed field is required, the camera is mounted horizontally and image-reversal software is required.

13. Inclined Moving Mirror with manual or automatic target Tracking Software and a Lock-In Laser to localize and track targets for Laser-Guided Missiles. The laser path could simply parallel to the visual path utilizing a bigger moving mirror or, for more accuracy, it could be co-axial with the visual path via two parallel transparent reflecting glass plates and utilizing a regular-sized moving mirror. However, being exact co-axial could have some dazzling effect. If two parallel cameras are used with the laser exactly in-between (cameras' optical centers and the laser emerging point are in a line exactly parallel to axis of inclination of the inclined mirror), the result is 3D field observation, almost co-axial laser and NO dazzling. However, utilizing one camera with parallel laser path to its visual axis with the laser emerging point located towards the farthest point of the inclined mirror is the simplest and most practical form and with NO dazzling.

N.B.: item 1 is just a SIM card with a new international code and items from 2 to 9 as well as item 11 are special new industrial designs and will differ according to each gun manufacturer's preference. In general, item 11 looks, in some-how, like a camera holder in a movie studio.

How to Use Invention:

Ownership and use of guns in civil life is restricted and regulated by laws and strict regulations in most of countries worldwide. This is because it is always difficult to know exactly who used which gun, when, where, how, and why?

The time it becomes easy to know and document accurately every detail about every time of use of every gun by every user, it becomes a **HUMAN RIGHT** for every human to have his own personal defense gun.

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At that time, No sane person can misuse his gun easily as he knows that every person around him is armed too. No one can face alone or with his own group or gang the whole community. This will be a **REAL NIGHTMARE** for Criminals, Dictators, Terrorists and Pseudo-Terrorists.

Guns with PSG-Devices are manufactured, shipped and shown in weapon show-rooms in a neutral non-authorized status and are NOT ready to use.

Authorization Programming is an Official Legal Process to be done ONLY by the Weapon Licensing Official Authorities (Subject to Approval according to psychological, mental and moral stability) in which full Finger Print record, Voice record, on-spot Photography as well as official ID copy records, address, mobile cell phone numbers and email are linked to the PSG-Device IP number and Serial number of the weapon to generate one unified International Gun User Reference Number (I-GURN) for the user. One I-GURN is generated for each user even if he has multiple guns or multiple nationalities. Copies of Authorization Finger Prints, Recent Photo (s) and IDs of the Authorized Person (s) including I-GURN are stored in the Internal Memory of the PSG-Device.

After primary Official Authorization Programming, a gun with PSG-Device become ready to use and the Gun is now a **TRUE Personal Smart Gun (PSG)**.

The PSG is loaded with a loaded bullet-safe. To switch it ON, its battery has to be at least 50% charged for it can work for good time. So, it is always advisable to keep it in the charger. For a right-handed (it is the reverse for left-handed users) user, he needs to press the right finger print sensor (FPS) to switch it on. After software startup and when the device is in the stand-by status it gives a vibration signal.

Touching the right FPS with the right index finger of the authorized user results in un-locking and activation of the PSG. It gives a vibration signal once it starts all recordings (If the software can't detect clear image, authorization is never complete) and it is ready with its Laser Aiming Beam (LAB) to shoot using one bullet-safe so long the hand grip is continuous then reauthorization is required for each additional bullet-safe. With putting the

PSG back in the charging case, with release of hand grip, after 30 minutes from activation or last shooting or with the removal of the bullet-safe for replacement, the PSG gives a long vibration signal, is back to the stand-by status and all recordings stop with sending copies of records (even with No gun shooting) through Wi-Fi (directly or indirectly) or data network to the manufacturer's server and to the local authorities' server as well as SMS to the local authorities.

Touching the left FBS with the left index finger of the authorized user results in authorization of the PSG for use of multiple bullet-saves so long the hand grip is continuous. With putting the PSG back in the charging case, with release of hand grip or after 30 minutes from activation or last shooting, the PSG gives a long vibration signal, is back to the stand-by status and all recordings stop with sending copies of records (even with No gun shooting) through Wi-Fi (directly or indirectly) or data network to the manufacturer's server and to the local authorities'

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server as well as SMS to the local authorities with PSG-Device IP, Gun's serial number, date and local time of the first shooting, name and ID number & I-GURN of the authorized user, GPS location of the shooting... etc.

At the time of authorized use, coded vibration signals will be made by PSG according to target existence, target distance, Laser Aiming Beam (LAB) auto-correction... etc. when battery becomes 20% charged, 3 warning long vibration signals will be made. At that time, the retractable magnetic charging wire could be pulled and connected to the PSG while in use. If not, and when it becomes 15% charged, 2 warning long vibration signals will be made and when the battery is 10% charged, the PSG gives a long vibration signal, activates the lock, turned to standby status, sends copies of unsent recordings as well as SMS and stays in the stand-by status for some time then become Turned Off.

In the stand-by status, Bluetooth (BT) activation for coupling with other device (e.g.: computer or mobile cell phone) and coupling is done by pressing (for right-handed users) the PSG's Left BT Button (LBTB) till it gives a vibration signal then entering the PSG specific code (in the PSG's stacked tag) to the other device. If a previously coupled device is available in vicinity of the PSG in the stand-by status it is automatically coupled. Pressing the Right BTB, in the presence of a coupled device, results in sending the last record to the coupled device. PSG makes a vibration signal once sending is successfully completed. Pressing the RBTB again results in sending the previous record and so on. This is to facilitate extracting the records at the police (local authorities) center.

Bilateral pressing of the BTB can start Temporary Emergency Authorization (TEA) process in the presence of Wi-Fi or data network with a long vibration signal. Then, simultaneous repeated touching of the RFPS with right index and LFPS with the left index until finger prints are recognized by the Manufacturer's server for international users and/or by local authorities' server for local users but Only if the temporary user is already having I-GURN. TEA is valid only for 24 hours and the temporary user accompanying the used gun has to report to the local authorities within 48 hours with acceptable excuse for it. If TEA is made by the manufacturer's server, it has to immediately report to the local authorities' server with user's I-GURN and ID copies, PSG-Device IP, Gun serial number, local time and GPS location of TEA. In case the local authorities' server is the one to give TEA, the reverse reporting should happen immediately as well. Activation or inactivation of TEA concept for foreign users in a country is subject to local governmental approval. The PSG owner can choose to inactivate TEA in his own PSG at the time of official authorization programming.

Wi-Fi of the PSG utilizes free or recognized Wi-Fi for immediate (or ASAP) sending of copies of recorded videos to the Manufacturer Server (for Official Neutral Legal Reports) as well as to the Local Authorities or Police Server (for Local Official Notification & Legal Reports) as well as a copy to the authorized user's online PSG account for his personal reference if he requested this at time of Official Authorization Programming. Each video records message is to be sent

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with the local time from its beginning till its end, PSG-Device IP and Weapon Serial Number together with GPS Location of recorded video scene at shooting (with tilt, direction in space and angle of shooting), GPS Location at time of sending, Authorizing User's finger print (that used for authorization), name, photo, I-GURN and IDs copies each time for each video for legal purposes. In case there is No free or recognized Wi-Fi near-by, PSG utilizes SIM card's network data to send the records.

The local authorities should provide PSG recognized (recognized only by PSGs) free Wi-Fi in many public places and with each Police Patrol Car and Motorcycle.

Wi-Fi is useful also for PSG software update downloading and instillation. Downloading occurs only in the stand-by status and instillation occurs only while in the charging case. Software accepts downloads only from manufacturer's server.

PSG software for mobile cell phones could be downloaded by PSG users to their mobiles so that they can get notifications through it as well as it copies all stored active Wi-Fi user names and passwords (with their approximate effective locations) in their cell phones and send it to manufacturer's server so that it will be downloaded with updates to PSGs according to geographical location (same country) for all PSGs (ONLY PSGs) to use as much as Wi-Fi sources as possible in an online cooperation agreement treaty within terms and conditions of use for PSG mobile software.

In case the video could not be sent successfully to manufacturer and police servers by any means, copies are sent temporarily by Wi-Fi to nearest PSGs so that these copies will be sent to servers once one of these PSGs is connected to free or recognized Wi-Fi (Not by SIM card's network data).

At the time of use, it will take few seconds from starting authorization to start shooting. These few seconds could be precious and may be considered time loss. On the other hand, these few seconds are very vital and may save lots of lives as it gives time for thinking. An angry shooter may change his mind as he knows that everything is being recorded and documented.

Custom software is to be developed to recognize human shootings from videos so that after sending copies of these videos it silently continue to send the PSG-Device IP, Gun serial number, authorized name, I-GURN, reference of the video sent and the new GPS location every half an hour by Wi-Fi or mobile data network (or every one hour by SMS in case there was no Wi-Fi or network data signals) to facilitate finding the gun in case it was hidden.

By law, the shooter himself should report to the nearest police center accompanying his gun within 48 hours from shooting in case there was suspected human injury. Otherwise his weapon license is subject to cancellation in case he failed to give acceptable excuse.

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BriefDescription of the Drawing (Total 8 drawing pages):

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External Parts (Fig. 1 frontal view & Fig. 2 lateral view)

101. Metal Case of Components (MCC)

102. Laser Object Distance Sensor (LODS)

- 103. HÍ Definition Auto-Focus Auto-Zoom Video Camera (HDAFAZVC)
- 104. Light Sensor for HDAFAZVC (LSZC)
- 105. HÍ Definition Auto focus Wide Angle Video Camera (HDAFWAVC)
- IOÓ.Light Sensor for HDAFWAVC (LSWC)
- 107. Laser Aiming Beam (LAB) - (seven different grades)
- 108. HÍ Sensitive Microphone Sensor (HSMS)
- 109. Infra-Red Flash Light (IRFL)
- 1 IO. Electronically Activated Lock with Sensor (EAL with EALS) - Right & Left
- 111. Right Finger-print Sensor (RFPS)
- 112. Left Finger-print Sensor (LFPS)
- 113. Right Blue-Tooth Button (RBTB)
- 114. Left Blue Tooth Button (LBTB)
- 115. Stand-By Emergency Charging/Data Port (SBECDP)
- 116. SBECDP Cover (SBECDP-C)
- 1 n. Right & Left Charging Plates (RLCP)
- 118. Magnetic Charging Port (MCP) for magnetic wired charging.
- 119. Bullet-Safe Insertion/Removal Sensor (BSIRS)
- 120. Grip Sensor (GS)

Laser Aiming Beam (LAB) Grades (Fig. 3A & 3B):

- 301. Grade 1: Simple continuous LAB that guides shooting ALMOST ONLY in Gun's Upright Position. No LODS. Laser path (31) is calibrated to cross the shot's path (32) at (33) the effective distance (e.g. 50m.) but without any special sign. It assists the shooter's experience with some guidance.
- 302. Grade 2: Color-coded double continuous LABs that guides shooting MAINLY in Gun's Upright Position. No LODS. The two LABs are located on the same level horizontally with Red LAB (34) on the Right and Green LAB (35) on the Left. The two LABs meet at (33) the effective distance (e.g. 50m.) with the calculated downwards deviation of LAB for the distance. When the camera software recognizes the two LABs overlapping (33) at the target it gives double vibration signal. Beyond the effective distance the colors become reversed (Red to Left side) and when the camera software recognizes color reversal (36) at the target it gives a single vibration signal.

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- 303. Grade 3: Pulsed LAB's (37) path (38) meeting the shot's path at the effective distance (e.g. 50m.) with Laser Object Distance Sensor (39) (LODS) utilizing separate frontal port as well as separate reflected laser path (40) from the target (41) and Vibration Signals that guides shooting MAINLY in Gun's Upright Position. This could be simple (303 A) or utilizing (303 B) a fixed 45° reflecting mirror (45) and a movable inclined mirror (46) for intended downwards deviation of LAB in case the EAL is broken to mislead the un-authorized user.
- 304. Grade 4: Pulsed LAB (37) with Laser Object Distance Sensor (39) (LODS), Vertical Accurate Adjustment by auto correction software according to target's (41) distance, a fixed at 45° inclined mirror (45) around the horizontal axis at right angles with anterior-posterior axis and an Inclined Moving Mirror (46) rotating around a horizontal axis at right angles with the anterior-posterior axis with accurate guidance in the Gun's Upright or Vertically Inverted Positions (like emergency shooting to backwards from above the shoulder with the aid of the Vision Stick) and Vibration Signals. One degree of mirror inclination change results in two degrees of LAB deviation. LAB and LODS utilize the same frontal port and utilize the same path (47) (co-axial but opposite directions) till the LODS path is separated by two parallel transparent glass plates (48).
- 305. Grade 5: Pulsed LAB (37) with LODS (39), Vertical Accurate Adjustment by auto correction software according to target's (41) distance, a fixed at 45° inclined mirror (45) around the horizontal axis at right angles with anterior-posterior axis and an Inclined Moving Mirror rotating (49) around a horizontal axis that is always at right angles with the vertical axis and a rotational movement of the inclined mirror around the vertical axis (50) in right angles with anterior-posterior axis with accurate guidance in All Gun's Spatial Positions and with Vibration Signals. Pulsed LAB and LODS are co-axial utilizing the same path (47) but opposite direction till separated by two parallel transparent glass plates (48).
- 306. Grade 6: Pulsed LAB with LODS, Vertical Accurate Adjustment in All Gun's Spatial Positions (like grade 5), Shot Site Location/Error Detection Software and Auto-Adjustment to counteract the wind effect as well as Vibration Signals. Best for sniper guns (especially if utilizes invisible Pulsed LAB that can be detected by its cameras and special goggles/telescopes). The difference from Grade 5 (305) is only a software difference.
- 307. Grade 7: Sophisticated Pulsed LAB with LODS, Vertical Accurate Adjustment in All Gun's Spatial Positions, Shot Site Location/Error Detection Software and Auto-Adjustment to counteract the wind effect (like grade 6), Object Relative Position and Speed Detection software in relation to Gun's Position and Speed with auto adjustment software to counteract the Target's movement and Gun's movement as well as Vibration Signals so that shooting can be done in relatively high accuracy from fixed or movement status to a fixed or moving target. The difference from Grade 5 & Grade 6 (305) is only a software difference.

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N.B.: From 4 to 7 the path of LODS is co-axial with the path of the Pulsed LAB with the aid of two parallel transparent glass plates. The Pulsed LAB could be either Visible, Non-Visible light waves, that requires special goggles/telescopes, or Dual. Dual LAB PSG-Devices could be feasible only in big PSGs as it requires good space and could be provided with additional button to switch easily between the two types (PSGs for civil use are provided only with visible LAB. Only PSGs for non-civil use could be provided with non-visible LAB).

Internal Components (Fig. 4):

- 401. Mother Board (MB)
- 402. HÍ Speed Multi Core Processor (HSMCP)
- 403. Dual Camera Processor (DCP)
- 404. Internal Memory (IM)
- 405. RAM (RAM)
- 406. SIM Card Drive & Slot (SCDS)
- 407. Micro SD Card Drive & Slot (MSDCDS)
- 408. Blue Tooth (BT)

- 409. Wi-Fi (Wi-Fi)
 - 410. Vibrator (VIB)
 - 411. GPS Location/Speed Sensor (GPSLSS)
 - 412. Compass (CMP)
 - 413. Spatial Position Sensor (SPS)
 - 414. Shock/Vibration Sensor (SVS)
 - 415. Long-Life Multi-Cell Battery with Over-Charge Prevention (LLMCB)
 - 416. Wired/Wireless Charger (WWLC)
 - 417. Connections between MB and external components.
- Accessories (Fig. 5A, 5B & 5C):
- 501. New international Code (e.g.: +999) for SIM card numbers for PSGs.
 - 502. Carry-Case with Power Bank & Right/Left Charging Buds (CC/PBRLCB)
 - 503. Carry-Case with Power Bank & Wireless Charger (CC/PBWC)
 - 504. Carry-Case with power Bank, Wireless Charger & self-retracting Charging Magnetic Cable (CC/PBWC/CMC).
 - 505. Charger for Carry-Case Power Bank (C/CCPB).
 - 506. Car Charger for Carry-Case Power Bank (CC/CCPB).
 - 507. Wireless Charging Pad for a disk drawer (WCP).
 - 508. Car Charging Case (CCC).
 - 509. Silencer Extension of Gun Rifled Tube (SE/GRT).

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O. Vision Stick with holder (51) that utilizes the Mobile Cell Phone Screen (or with built-in rotatable, or better, fixed screen that could be rectangular or better overall pear-shaped with two unequal rounded screens, the bigger is for the chosen scene to observe and the smaller for the wide angle opposite direction, with the necessary hardware and software) to observe the scene from behind protection. This is an expandable stick (52) with (53) front two HD video Cameras (Zoom and Wide Angle) and backwards HD Wide Angle/zoom single video Camera at right angles with the stick with a fixed or rotatable secured mobile cell phone holder (51), a controller handle with central control station (54), a fore-arm gentle holder (55), a power bank (56) as well as wired connection (57) to connect the video Cams to the cell phone as well as charging it and a separate charger (Not shown). It could be used alone with the PSG or it could be attached to a protective shield (Not shown) to fight and being protected while in mobility.

.Auto-Sniper base that holds a sniper gun and able to shoot automatically or under the control of an operator. It has a high definition telescopic auto-focus auto-zoom video camera (58) (HDTAFZVC) capable to detect invisible Pulsed LAB and capable of night-vision with its optical axis parallel to the axis of the gun's rifled tube and aligned above it as well as a high definition auto-focus wide angle video camera (59) (HD AFW A VC) capable to detect invisible Pulsed LAB and capable also of night vision to scan the field to spot targets. The base (60) can rotate around the vertical axis and the sniper gun carrier (61) is motorized to be inclinable around the horizontal axis and attached to the rotating base from one side. The gun carrier is provided with a shock-absorber (62) to counteract the rebound movement after each shooting. The HDTAFZVC spot and track the target (special software) then align the spot of the LAB to the target (could start with a false target to allow for shot location/error recognition and LAB auto-correction for the wind and movement) and re-align the LAB spot to the target after shot location/error recognition and auto-correction. It should be provided with a Vibration Sensor to detect PSG vibration after LAB auto-correction. The base is better (but not a must) fixed to a superior attachment which could be either fixed like a ceiling or a side arm from a tower or it could be mobile like a remote-control vertical aircraft. Its bullet-safe should allow a good number of bullets (e.g. in a tape form). The sniper gun itself is provided with a silencer. The response center (with the necessary hardware, software and custom software) could be either in the control room or better in the auto-sniper unit for shorter reaction time. However, full automatism is NOT advisable and a supreme control should be kept in the control rooms to choose targets, when to shoot and when NOT to shoot. Electronically activated trigger activator is connected to the base and fixed to the trigger parts of the gun for shooting (Not shown). Sniper guns with built-in electronically activated trigger activator could be made. It is better to have specially made sniper gun to be built-in to the auto-sniper base with direct hardware and software communication for shorter reaction time and less errors. **The figure is just a diagrammatic figure to show the idea.**

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511. Inclined Moving Mirror (63) for Security Observation Camera (64) without or with manual or automatic Target Tracking Software. Inclination is around a transverse axis (65) at right angles to the optical axis of the observing HD video camera. The camera itself can rotate around its own optical axis (66). At 45° of mirror inclination the optical path of the camera is deviated by reflection 90°. Change of inclination in either direction by Δ results in change of observation path direction by 2° in the same direction. This results in faster scanning of the observed field with additional energy saving (change of mirror inclination takes much less energy than moving the whole camera) and when it is multiplied by the total number of security cameras, the energy saving is considerable. A third advantage is that the camera itself could be hidden and only the mirror is used for observation and could be easily hidden by different shapes of decoration. A fourth advantage is that the expensive camera is hidden and protected and in case the exposed part is damaged for some reason, it is only a mirror and could be easily replaced. However, using the inclined mirror leads to image reversal. If it is required to have faster vertical field scanning, the camera is mounted vertically with its 12 o'clock position is aligned towards the highest (farthest) part of the inclined mirror to compensate for image reversal. If faster horizontal scanning of the observed field is required, the camera is mounted horizontally and image-reversal software is required.

512. Inclined Moving Mirror (63) with manual or automatic target Tracking Software and a Lock-In Laser to localize and track targets for Laser-Guided Missiles. The laser path (67) could simply parallel to the visual path (68) utilizing a bigger moving mirror or, for more accuracy, it could be co-axial with the visual path via two parallel transparent reflecting glass plates (like 48 in 304 & 305 in Fig. 3B) and utilizing a regular-sized moving mirror. However, being exact co-axial could have some dazzling effect. If two parallel cameras are used with the laser exactly in-between (cameras' optical centers and the laser emerging point are in a line exactly parallel to axis of inclination of the inclined mirror), the result is 3D field observation (Not shown), almost co-axial laser and NO dazzling. Laser Object Distance Sensor (LODS) could be added (39). However, utilizing one camera with parallel laser path to its visual axis with the laser emerging point located towards the farthest point of the inclined mirror is the simplest and most practical form and with NO dazzling.

N.B.: item 501 is just a SIM card with a new international code and items from 502 to 509 will be of special industrial designs and will differ according to each gun manufacturer. In general, item 511 looks, in some-how, like a camera holder in a movie studio with built-in telescopic cam and wide-field cam.

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Best Mode for Carrying Out the Invention:

This invention is closely related to gun industry though it does NOT modify its mechanics. So, it is best to have its dimensions and fine design as well as prototype testing to be done in close relation with an already existing gun factory. PSG-Device will add value to the manufactured guns converting it into personal smart guns (PSGs).

Industrial Applicability:

All the components of the invention and its accessories are already available in market and being used in different ways in other products. The NEW Concept of the invention is to collect these components together and use it together with guns in an innovated way to have new product, new value and new concept.

Of course, newly designed multiple software products are mandatory in order to operate the new products but this will never be a problem. Professional programmers can take over as anything logic could be programmed. The most important is the concept or the idea.

Sequence Listing:

1. TechnicalField P. 01
2. Background Art P. 01
3. Disclosure of Invention P. 01 -13
4. Brief Description of Drawings P. 14 -18
5. Best Mode of Carrying Out the Invention P. 19
6. IndustrialApplicability P. 19
7. Sequence Listing P. 19
8. Claims P. 20-22
9. Abstract P. 23
10. Drawings: Total Eight (8) Drawing Pages (1/8 to 8/8).

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Claims:

1. The Personal Smart Gun Device (PSG-Device) with the use of mother board, processor, internal memory, rechargeable battery, operating software, (collectively: suitable hardware and software)... etc to control the use of guns that have it in a built-in form. These guns, with PSG-Devices, could be used with one or more of related accessories.
2. As in item 1, the concept of gun electronic official authorization programming and set up of the gun's PSG-Device.
3. As in item 1, the concept of unified International Gun User Reference Number (I-GURN).
4. As in item 1, the concept of gun personalization and gun finger-print authorization as well as the concept of Personal Smart Gun (PSG).
5. As in item 1, the concept of Temporary Emergency Authorization (TEA) of guns.
6. As in item 1, the concept of gun GPS localization.
7. As in item 1, the concept of having one or two (zoom & wide angle) simultaneous cameras' video with sound and shock recording together with user's information of each gun-use.
8. As in item 1, the concept of online gun-use video records archiving either as soon as possible or in real time (live).
9. As in item 1, the concept of electronically activated gun lock with lock integrity sensor so that when the lock is damaged, software activates Laser Aiming Beam (LAB) wrong deflection utilizing rotating prisms, exaggeration of inclination of a movable inclined mirror or any other means to mislead any un-authorized user. The software also makes immediate notification to the Local Authorities' server and Manufacturer's server as well as SMS to Local Authorities.
10. As in item 1, the concept of gun bullet-safe insertion/removal sensor and gun hand grip sensor with software to control and regulate gun authorization.
11. As in item 1, the concept of gun vibration coding.
12. As in item 1, the concept of smart control of guns with right and/or left finger-print authorization coding.
13. As in item 1, the concept of smart control of blue tooth with right and left buttons with coding in guns.
14. As in item 1, the concept of two color-coded laser Aiming Beams (e.g.: red on right side and green on left side) to define the gun's effective point when meeting at it (e.g. 50m.) and to show exceeding the effective distance by color reversal (red to the left) for gun shooting or for any other purpose like to estimate object distance by estimating the distance between the two spots on that object before or after reversal OR by the controlled simultaneous equal changing of the angles of laser projection by moving the laser projectors or preferably by utilizing one movable inclining mirror (with sensitive inclination sensor) for each laser projector (in horizontal alignment with mirrors-in or mirrors-out configuration with central observing camera) for controlled change of

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projection angle till the two spots fully coincide as documented by a sensitive HD auto-zoom observing camera with software for control, laser spot color saturation analysis and distance estimation. Object distance can be estimated from the angles of projection (equal from both sides) and the distance between the two points of projection.

15. As in item 1, the concept of having auto-correction software for the direction of Laser Aiming Beam (LAB) to compensate for distance detected by color overlapping or reversal by video recognition software or by Laser Object Distance Sensor (LODS) in guns.

16. As in item 1, the concept of human, animal or moving object video software recognition for guns or accessories^ the concept of suspected human shot injury video software recognition by guns as well as the concept of video shot location/error recognition software and auto-correction of Laser Aiming Beam (LAB) direction to compensate for wind and movement.

17. As in item 1, the concept of SIM card use in guns.

18. As in item 1, the concept of new international code for SIM card lines to be recognized world-wide as guns.

19. As in item 1, the concept of use of back-up SD cards in guns.

20. As in item 1, the concept of Wi-Fi use in guns with the concept of PSG software for mobile cell phones that could be downloaded by PSG users to their mobiles so that they can get notifications and communicate through it as well as it copies all stored active Wi-Fi usernames and passwords (with their approximate effective locations) in their cell phones and send it to manufacturer's server so that it will be downloaded with updates to PSGs according to geographical location (same country) for all PSGs to use as much as Wi-Fi sources as possible in an online cooperation agreement treaty within terms and conditions of use for PSG mobile software.

21. As in item 1, the concept of free Wi-Fi location sources to be recognized only by guns (PSG Recognized Wi-Fi).

22. As in item 1, the concept of PSG to PSG Wi-Fi video-records transmission in case of absence of free Wi-Fi, recognized free Wi-Fi or data network for temporary storage till it is sent, without keeping permanent copies, through free Wi-Fi to manufacturer's and local authorities servers.

23. As in item 1, the concept of use of electronically-controlled moving inclining/rotating mirror in gun's Laser Aiming Beam (LAB) path direction control as well as in observation security cameras with or without manual or automatic object tracking software and with manual or automatic target Tracking Software and a Lock-In Laser to localize and track targets for Laser-Guided Missiles.

24. The Vision Stick that utilizes the Mobile Cell Phone Screen or with built-in rotatable, or even better, Fixed Screen that could be rectangular or rather better overall pear-shaped with two unequal rounded screens, the bigger is for the chosen scene to observe and the smaller is for the wide angle opposite direction field, with the necessary hardware and

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software in order to observe the scene from behind protection. This is an expandable stick with front and backwards video Cameras at its tip at right angles with the stick with a fixed or rotatable secured mobile cell phone holder (or a built-in rotatable or fixed screen), a controller handle to switch between different cameras as well as zoom activation, a fore-arm gentle holder, a power bank, a central control station with necessary software with wired connection to connect the video Cams to display on cell phone screen that should have a specially developed software as well as charging it (cable is needed if a cell phone screen is used and not needed for a built-in screen) together with a charger. The vision stick could be used alone with the PSG (or any gun with LAB) or it could be attached to a protective shield to fight and being protected while in mobility.

25. The Auto-Sniper Base that holds the sniper gun and able to identify, lock-in and track targets manually or automatically with the high definition telescopic auto-focus auto-zoom video camera (HDTAFZVC) capable of night vision and detecting invisible laser aiming beam (LAB), additional HD auto-focus wide angle video camera (HDAFWAVC) to scan the field for target spotting (capable also of night vision and invisible LAB detection) and recognition software to direct the sniper gun Laser Aiming Beam (LAB) spot to the target and shoot then immediately redirect LAB spot to the aimed point in the target after shot site location/error recognition and LAB auto-correction to compensate for wind and movement and shoot again (the first shot could be shot to a false test target to recognize the effect of wind and/or movement and to estimate the error factor). E-activated trigger activator is connected to the base and fixed to trigger parts of the sniper gun to shoot. Sniper guns with built-in e-activated trigger activator could be made. It is better to have specially made sniper gun to be built-in to the auto-sniper base with direct hardware and software communication for avoiding duplication of items and for shorter reaction time and less errors.

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