

FORM 2

THE PATENTS ACT, 1970

[39 OF 1970]

&

THE PATENTS RULES, 2003

COMPLETE SPECIFICATION

[SEE SECTION 10 AND RULE 13]

1. TITLE OF THE INVENTION

**“DRIVER(USER) SAFETY MODULE USING INFRARED CAMERA
BASED ON PHOTOCHROM AUTHENTICATOR AND ITS
APPLICATIONS”**

2. APPLICANT

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**3. PREAMBLE OF THE DESCRIPTION: THE FOLLOWING
SPECIFICATION PARTICULARLY DESCRIBES THE
INVENTION AND THE MANNER IN WHICH IT IS TO BE
PERFORMED.**

Field of invention

[0001] The invention relates to the field of mechanical engineering and electronics field, in general invention relates to the driver safety, where module control and co-ordinate the safety procedures, and also helps in safe roading protocols & driver learning mode, even to escape in malfunctioning situation & disfunction of vehicle.

Objectives of invention

Why my invention needs to be permitted?

[0002] Which I really experienced in my life, many accidents have made me inspired to solve this puzzle, which has major problems, in turn are creating huge problems in present developing world, in which many present methods are inaccurate, lack of efficiency, whereas many methods don't have any non-real time monitoring system.

“Then what may be the better way to solve this issue”

[0003] Generally other methods are not even accurate\perfect, comparatively than my methods, wherever I saw that using of the impracticably misuse of fake seat belts or not being used behind the eyes of police, even which makes this inefficient, thus, so I believe that by this inventory, many major fundamental problems will come to end.

ACCIDENTAL ANALYSIS

[0004] we have from the present data, 449,002 accidents took place in the country during the calendar year 2019, which is leading to 151,113 deaths and 451,361 injuries, in which 33% of them are caused by the seatbelt disuse.

in general (86%) users are not using their seatbelt, which is even dangerous task to be performed during driving, which behind the eye of police.

Demerits of old(present) /conventional seat belts monitor:

[0005] The old methodology of using magnetic clamp, which is easiest way but, it can show the demerits, where bypassing the seatbelt holder or magnetic clamp, which can be replaced from local market, which leads to impracticable/unused states of seatbelts, and also leads to accidents and other forms.

BACKGROUND AND PRE-TECHNOLOGICAL BRIEFING

SEATBELT PHOTOCHROM BASED AUTHENTICATOR

[0006] Photochrom is a technology, whereby using infrared camera, the DSM can analyze the targets [Authenticating space] even with black screened visibility, [where photochrom based camera can easily analyze the Authenticating space with 30% visibility, which will be hidden in user perspective to ensure some safety protocol].

AUTHENTICATING SPACE:

[0007] Authenticating space is an attachment on the seatbelt, where it should be placed in the center of seatbelt to authorize, here, in the authenticating space a non-copy able code will be applied on the center of black screened glass slide, [code will be placed behind the smaller black screening glass of (30% visibility)], which is hidden code for user prescriptive, while it captures for authentication process, seatbelt authenticator is authenticated (infrared camera) by DSM to ensure the safety of driver and [here, DSM scans for code for concerned processing (for commonly the code can't be seen in naked eye) where infrared camera with photochrom has a capability to scan the things in less visibility of darkened factor].

DRIVER(USER) SAFETY MODULE (DSM):

[0008] DSM is a central controlling and processing unit, which has ability to scan, authenticate, alerts, and also to decide the deceleration(retardation) & acceleration of vehicle, guiding the user, escaping in malfunctioned situation, storing data with respect to user usage and some pre/post accidental usage data also.

Nonprogrammable circuit pathway [NPCP]:

[0009] Every programmable circuit board has a threat of electronic bypassing or hacking which lead to breakdown of whole system so, here some changes are made in both software and hardware design to ensure that third party user can't be able to access to change any software bypass in firmware.

DSM VARIANTS:

[0010] I) DSM will have two varieties, where it will be based on where modified servo is implemented (implementation of EASCM OR IASCM), for present vehicle without any chance of modification, we should conduct the implementation of external servo motor and pedal locking system to the accelerators pedal, that will be **model 1 (detailed explanation is given below)**.

II)for new model, implementation of internal modified servo motor will be in between accelerator potentiometer gears and accelerator pedal, in which internal servo increases the stability of acceleration and deceleration procedures easily, rate of malfunctioning will be less and which it can perform highly accurate procedure, which even eliminates the pedal locking system without any difficulties, then it will be **model 2**.

ACCELERATION CONTROL MODULE [ACM]:

[0011] Here, initially ACM is controlled by main systems of DSM & ERM, for respective procedures where ACM will act as subsystem, which in turn controls the pedal locking system & accelerator servos control module, (sub module for acceleration control).

ACCELERATOR SERVO CONTROL MODULE [ASCM]:

[0012] Acceleration can be controlled & analyzed by modified external or internal servo controller module, which ASCM will take a real time data from modified servo motor ,which is basically implanted in between of potentiometer gears and accelerator pedal, even during
5 acceleration procedure the implanted servo motor will rotate in same axis pedaling of accelerator, while accelerator servo controller module will record the data of acceleration speed & current axis of servo, when DSM initiates the command to acceleration control module for deceleration procedures, then ACM will initiate the command to ASCM, then same ASCM will
10 analyze the data produced before pre-initialization of commands by ACM, then ASCM will calculate the amount of torque & point of action that [modified servo] should be performed to rotate in reverse axis to obtain the stage speeds with respect to [1km/h drop in every 12 seconds up to designated speeds of stages], post stage speed of 1km/h raises in every 4 seconds up to designated speeds.

EMERGENCY REVERTING MODULE:

15 [0013] when user faces any malfunctions, that can be rectified by using emergency reverting procedure, the user should attain this by pressing emergency reverting button, when emergency reversion is established, which breaks the line of signals that are processed, (that was pre-initialized to intimated by DSM,ACM<C during stage 1&2), (where it cuts of digital signal [DSM, ACMDS 1&2, LTCDS1&2] which is initially deployed to acceleration control module&
20 DSM) Then 11 minutes timer will be activated in parallel, where set of +R digital (normal mode) signals will be deployed by ERM, to resume the normal driving experience, where all acceleration limits will be freed to pedaling the max speed and then after 11 minutes of timer, the normal procedure of DSM will resume as normal as preset code, and ERM will be deactivated for other 2 hours to set procedures safe.

LOCKED THROTTLE CONTROLLER MODULE [LTCM]:

[0014] In parallel for practical double safety procedures to ensure the non-malfunctioning or disfunction in safety side, which acts as backups for resuming the safety procedures when eventually one system fails to work, DSM will initiate the digital signal command to locked
30 throttle controller module, where the LTC module initialize digital signal to **electronic control unit** (ECU) to set a stage speed, ECU which starts the deceleration and acceleration maneuvers to obtain the stage speed.

EXTERNAL BATTERY BACKUP SYSTEM [EBBS]:

[0015] when the vehicle undergoes sudden stoppage with the medium of glitch or engine Squealing, definitely the power system might be shut down, where power stoppage may impact
35 the DSM system, so we came with solution to the problem, where we set battery-powered system, that will maintain the system power ability to 300 seconds of backup and EBBS will save to time of booting to that DSM requires.

DRIVER LEARNING PROCEDURES [DLP]:

[0016] DRIVER LEARNING PROCEDURES is a mode in DSM, where DSM will be set to STAGE 1 procedure, where max speeding ability will be 50km\h, the procedure will stay until the user the reverts the mode (which will be safe max speed to learn the procedures and driving).

5 VEHICLE SYSTEM MALFUNCTION ESCAPING PROCEDURE:

Vehicle System Malfunction Escaping procedure is a mode in DSM, where DSM will be set to stage procedure, which reduces the speed of vehicle to 25km\h [1km/h drop in every 3 seconds], the procedure will stay until the safe deceleration of vehicle (procedure will be helpful to reduce the high speeds in emergency condition).

10 USER AUTHENTICATING SPACE IDENTIFICATION ALGORITHM:

[0017] PHOTOCROM authentication process has a major issue, normally while during the scanning, high ability infrared camera with photochrom Capability, which has deep highly impacted processing, which can create some issues in privacy factor (which highlights users clothing) to avoid this factor, we introduced privacy stutter and UASIA [*1]which during
15 booting the DSM, it identify the user and tracks down and makes locked frames on authenticator space and we can assure that encrypted data, which has produced by DSM will be safer in user perspective and also for us.

[0018] Majorly the problematic thing in photochrom will be due to formation of non-formalized image processing and highly targeting towards insecure place (light-weight material) or
20 uncovered place of target, which generally defaults the major things, which can be resolved by the mechanism called (PLFT)portraited locked focusing technology.

[0019] The above statement states that the previous conditions of demerits of the infrared camera based on photochrom can be used to solve the major problem with specific color identification, which causes the user privacy in terms, and which leads to complete tremble down
25 of its original use, from the above mentioning proposal which leads us to go towards its application and privacy Factor

[0020]from above statement we can find that the level of base of the shutter in which, we can determine the preset safety by physical adjusting to angle mechanism and by the EOS or EIS method which are used on software-based, while driving we can use to zoom in and zoom out
30 mechanism for stabilizing the targeted work frames, when physical and EIS, which enables the frame controls in turn are used to Solve the problems of unused condition of user and safety precautions that provides trust matters to consumers (user).

[0021] solved mechanism: from setting up of Sutter base to 36 angle mechanism which leads to un distractable privacy in turn this just acts as decagon shutter and by the preset EIS (electronic image stabilizing) regulated form detects prefecture frame rate by setting [1:1].
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[0022] later on [1:1] frame can be considered for other resizes like 0.9:0.9 or 0.3:0.3 frameset's which can be critical size based on user seating in the driver usage, which is generally AI based

mechanism which generally detects the target and later on which leads to targeted image frame size privacy factor, generally it will be established AI user authenticating space identification algorithm [*017] where even it can't change it intends, this mechanism is explained below in this page.

- 5 **[0023] PEDAL LOCKING MODULE (PLS):** PLS is attachment/adjunct on accelerator pedal, which will push accelerator pedal in parallel with ASCM in acceleration control maneuver and also locks the pedal after reaching its max commended maneuver, in which PLS will ensure the stability of external servo and holds to ensure the greater accidental push or non-malfunctioning of components and also to limit the pedal to max-speeds of stage.

10 **PATENT LITERATURE FROM PRIOR ART**

as I researched on many patent that as an many demerits like durability factor, downshifting, improper speed reduction declaration, sudden ignition blockage, improper declaration of fuel engine over electric vehicle.

- 15 **[0024] Chinese patent application no [CN205273408] discloses the sudden ignition blockage durability factor:** the present invention relates to a Magnetic induction detection circuit, were whole things based on where, turn in magnetic induction belt buckle mounted on seat belt, which passenger detection module detects an infrared sensor, which is connected to the signal terminal of SCM control module.(usage of flex, hall & IR sensor, that will be ok for some factor, after heavy usages or rougher usage, it may behave has an inaccurate on based on further, even in humans daily on usage, sensors on seatbelt are not going to be durable on time goes).

- 20 **[0025] US Patent application no [US7639125]:** the present invention relates to a seat belt warning system comprising seat belt buckle switch sensor and seat occupancy detector. The seat belt buckle switch sensor is integrated to the seat belt buckle for detection, The seat occupancy sensor in built of pressure sensitive switching device, where it included with multiple individual pressure sensors, pressure sensitive devices are adapted to the detection of seat occupancy wave device, where in unused condition a seat belt warning will be enabled.

- 30 **[0026] Patent application no [201921038347] improper speed reduction with respect from 15km\h between 0km\h acceleration:** the present invention relates to an electronic safety system designed for the seat belts, the system would decrease the speed of the motor, based on seatbelt usage, has patent works as came to know that many deceleration processes that even after 5 minutes of time the speed decreases to 30 km\h-25 km\h and after some intervals the speed will be to decrease to 10 km\h (things may lead to major accidents (hint-in many countries while traveling in express highways in which sudden deceleration results in high impact accident while it reaches 0-10 km\h, when highways doesn't have sub parking roads) to that problem.

- 35 **[0027] Patent application no [202021040676] improper speed reduction declaration:** the present invention relates to point, when the driver is in the sleep while driving, so the whole system will avoid accidents and alert driver by medium of vibration and also by controlled

deceleration of the vehicle (patent work not even declared how much speed need to be reduce has on and time intervals).

[0028] Chinese patent application no [CN103057515] discloses the sudden ignition

blockage: the present invention relates to point, where it relates comprising safety belt, and a secondary buckle and a primary buckle arranged at ends of the safety belt. Hall sensor is mounted on the primary buckle which linked to processing circuit, the processing circuit is connected with an MCU, MCU controls the ignition controller. The system includes that when the secondary buckle in pairing, the MCU sends an enable signal to the ignition controller after things are settled in, and then the ignition controller is insisted to start an engine (if ignition stops into middle of roads, that will definitely be results in high impacted accident, which by all sides of wayside, there will be no chance of quick-time ignition).

[0029] Improper declaration of fuel engine over electric vehicle while deceleration: as many patents declared about the phase of electric vehicles deceleration and not even many works as declared about the present (liquid fuel engine) how to make deceleration maneuvers without changing any new implant even.

Sub: Using of normal camera for monitoring which is inefficient, informs which will be inaccurately defines the elevations, which if we are using elevation angle as line formatting calibration, which is inefficiently performed on by, even we tested with subject to different colors, or differs size products of seat belts which is also inaccurate with subject to by present inventory.

BREIF DESCRIPTION OF DRAWINGS:

[Fig.1] BLOCK DIAGRAM OF DSM: it illustrates a block diagram of DSM components.

[FIG.2] SYSTEM DESIGN OF DSM MODEL 1: it illustrates the structural design of DSM and ERM with full scale representation.

[FIG.3] DRIVER SAFETY MODULE PROCEDURES IN FLOWCHART: flowchart illustrates DSM system protocol sequence in the loop system.

[FIG.4] STRUCTURE OF AUTHENTICATING SPACE: it illustrates the structural design of authenticating space.

[FIG.5] STRUCTURAL ARRANGEMENTS OF AUTHENTICATING SPACE: it illustrates the structural implementation on user seatbelt for authentication

[FIG.6] EMERGENCY REVERTING MODULE CYCLE: it illustrates the reverting cycle from start to end procedures

[FIG.7] EMERGENCY REVERTING MODULE [MODEL 1]: it illustrates the structural design of ERM with full scale representation for model 1

[FIG.8] SYSTEM DESIGN OF DSM [MODEL 2]: it illustrates the structural design of DSM with full scale representation for model 2

[0030] ADVANTAGES OF MY INVENTORY

- DSM will be more durable due to lack of direct usage by humans.

- No single mechanism related to fuel engine blockages.
- DSM has an encrypted and indescribable local database storage management system (database will have high level credibility and higher durable in tough condition).
- 5 • DSM has grater chances to implant on existing car (this condition helps for cost reduction factor, comparatively saves from changing their whole things).
- Proper downshifting deceleration (RETARDATION) is declared with proper valid reasons which in other patents, the things are properly not declared until to the required extent.
- 10 • Emergency reverting\protocol process is declared comparatively to other works has not done for their system failure conditions.
- Safe speed decreasing timed maneuver is declared with valid reasons for respectively to express ways, or any dangerous movements.
- DSM does not have any chance for mechanical imitations by breaking the main circuitry.
- DSM can used in malfunctioning & break-failure situation to reduce speed of vehicle.
- 15 • DSM will have two factor acceleration controlling procedures, if one system fails to execute the procedure, definitely another system continues to run the procedure, where in parallel two factor will run simultaneously if there is normal condition.
- DSM Stores the data of GPS, onboard acceleration speed, seatbelt usage, encrypted external and internal video as pre/post accidental conditions, even DSM has capable to record the data of acceleration speed & current axis of servo which is implanted on pedal, and it also able to analyze the data of malfunction.
- 20 • DSM system can be used in field of driving learning platform.
- DSM will be real time monitoring system.
- DSM has external power backups for shorter intervals for sudden/debilitating faulty alternator (which hold system in operating state which saves time for booting condition).
- 25 • DSM will act as a medium that user also experiences the procedure not only virtually\digitally, also by physically (DSM will not only act as normal speed reduction, where user will feel deceleration mechanism by physical component).
- ACM system will have greater stability in factor in deceleration and acceleration mechanism, even higher force is applied to the component (higher durability factor)
- 30 • In electric vehicles, 25km/h has respective speed is recognized as helmet free riding in present world, as for taken as opportunity to utilize in my inventory to use in stage 2 and pre stage.

HOW PROJECT WILL WORK'S

35 MAJOR HARDWARE NEED:

[0031] As DSM mainly consists of major controller board, with two different functional infrared camera, equips with external GPS module, Realtime clock with data backup needs (solid

drivers) packed up by carbon fiber, with external backup battery system, relay module, electric linear actuator setup and solenoidal lock as pedal locking system, acceleration control module (PLS & I&EASCM), relay module, non-programmable circuit pathway external & internal accelerator servo controller module, Emergency Reverting Module, Locked Throttle Controller Module, modified servos.

(i)PREPROCESSING PROTOTYPE SPECIFICATION WITH PERSPECTIVE OF BOTH HARDWARE AND SOFTWARE

[A] INFRARED CAMERA(PHOTOCHROM) 5MP EQUIPPED WITH EXTRA INFRARED LIGHT, SPECIALLY CALIBRATED PORTRAITED LOCKED FOCUSING TECHNOLOGY [003] &PRIVACY LOCKED DESIGN.

[B]IR CAMERA WITH NIGHT VISION FOCUS ON FOR EXTERNAL SECURITY PURPOSE.

Object of invention:

[0032] System Boot and Pre-Initial-Checks: when the user intends to turn on the ignition key definitely primarily[P01], power analog signal will be detected as initial signal to boot DSM [P02][power will be lined from main power cord, where power will be processed from the powerline which later passed by our DSM line which later, it will turn on] DSM system initially it takes time to boot up and makes a pre-initial check, [P03]then it will operate both infrared camera[c1&c2].

[0033] Specific User Frame lock: which later on, it under goes for user authenticating space identification algorithm [*01] then DSM(C1) will make track down process specifically the driver(user) to ideal position [P04] and it make an angle towards the seatbelt authenticator space, then DSM will under-go to the pre-initialization process, [P05] were central photochrom procedure that will enable the filter, [P06] then it will makes a fixed framework line towards the seatbelt photochrom authenticator space [factor].

[0034] Authentication Process: later on, authenticator will undergo for pre-checks from central function present in the DSM, main OS checks and ensure that seat belt Photochrom authenticator space and driver safely protocol [P09], where photochrom based infrared camera can easily captures the Authenticating space and gets authenticated even afterwards, it under goes double checks procedures after authorization of specific things, then the central factor that authenticated on the DSM, in turn DSM will allows user to accelerate to max speed [P10], In loop procedure the DSM will rechecks code for every 300 seconds for safety maneuvers [P11]

[0035] even secondary [C2] IR night vision camera will record the external interface & internal interface[P07], that will be another backup for describe data for any situation like pre/post accidental condition monitoring factor [P08].

(i)WHAT IF USER TRIES TO MAKE AN ACCELERATION WITHOUT SEATBELT (PRE-STAGE IN MODEL 1)

[0036] as I mentioned above, if DSM Doesn't not detect any seatbelt authenticator space (seatbelt authenticator code), then DSM will activate pre-stage procedure [P15], where in general, it alerts the user by primary analog signal as alarm, then after the ignition procedure the DSM will deploys signal to acceleration control module, where ACM system will initiate command to ASCM, ASCM will limits the speed of vehicle up to designated speeds of Pre-stage [P16], (Acceleration speeds can be controlled & analyzed by external accelerator servo controller module in case of model 1, which EASCM will take real time data from servo motor which is basically implanted on accelerator gears of accelerator pedal, even during acceleration procedure the implanted servo motor will rotate in same axis to pedaling of accelerator, which helps to external acceleration servo controller module to record the data of acceleration speed & current axis of servo, when DSM initiates command to acceleration control module for deceleration procedures, then ACM will initiate the command to EASCM, then same EASCM will analyze the data produced before pre-initialization of commands (ACM), then EASCM will calculate the amount of torque & point of action that [modified servo] should be performed to rotate in reverse axis to obtain the pre stage speed (from the **point of action**) where user can only accelerate with maximum speed of **25km**, even it is a considerably safe roading speed in electric vehicle as mentioned in {**in electric vehicle 25km/h as respective speed is recognized as helmet free raiding in present world, as for taken as opportunity to utilize in my inventory**} so we can consider also to non-electrical vehicle.

[0037] In parallel for practical double safety procedures to ensure the non-malfunctions, in other side DSM will initiate the digital signal command to locked throttle controller module with respect to ASCM speeds, where the LTC module initialize digital signal command to [ECU] ELECTRONIC CONTROL UNIT, then ECU starts the deceleration maneuvers to obtain the pre-stage speed of 1km/h drop in every 12 seconds up to designated speeds of pre-stage(25km\h)[P16], then after confirming the full scale deployment of EASCM with respect to pre stage, then pedal locking system will be activated by DSM, then PLS will locks beta position 2, until user re-clamp their seatbelt properly (PLS that will ensures the stability of external servo and hold to limiting the pedal to max-speeds of pre stage), DSM will set with continuous primary analog signal as an alarm, if user obeys to re clamp the seat belt again, DSM system will resumes to normal.

or (II)WHAT IF USER REMOVES THE SEATBELT IN THE MIDDLE OF OPERATIONS (STAGE 1 IN MODEL 1)

[0038] As mentioned above, if DSM doesn't detect the seatbelt authenticator space in the loop process [P13], then DSM will activate deceleration mechanisms where in general, it alerts the user by secondary analog signal as an alarm, thereby in the next 480 seconds, if driver indeed to drive, then user dare to face, where in first stage primarily [P14], ACM(acceleration control module) will activate or cling, where ACM system will initiate command to EASCM, EASCM will limits the speed of vehicle up to designated speed of stage 1(**from the point of action**) by where user can only accelerate up to stage1 [the basic speed will be reduce to 50km/h] DSM will set out some specific digital signal to acceleration control module 1 where we made/designed in such way ASCM will lift the accelerating pedal up to (-15* inclination) upward as **from the**

point of action, with speed reduction interval of 1km/h drop in every 12 seconds,[EASCM will analyzes the data produced before pre-initialization of commands ACM, that will help EASCM to calculate the amount of torque & point of action that (external servo) should be performed to rotate in reverse axis to obtain the stage 1 speed] In parallel for practical double safety procedures to ensure the non-malfunctions, in other side DSM will initiate the digital signal command to locked throttle controller module with respect to ASCM speeds, where the LTC module initialize digital signal to ECU, then ECU starts the deceleration maneuvers to obtain the stage 1 speed 1km/h drop in every 12 seconds up to designated speeds of stage 1 (50km\h), then after confirming the full scale deployment of EASCM with respect to stage 1 procedure, then pedal locking system will be activated by DSM, then PLS will locks beta position 1 until user re-clamp their seatbelt properly (PLS that will ensures the stability of external servo and hold to limiting the pedal to max-speeds of stage 1), DSM will set to another 480 seconds timer with continuous tertiary analog signal as an alarm, their after if user also behave in same act as in the loop procedure the DSM will enters to stage 2 procedure.

(III)IN STAGE PROCESS EVEN USER MAINTAINS A SAME BEHAVIORAL ACT THEN USER WILL FACE THE STAGE-2

[0039] There after DSM to ACM has, stage 2 procedure, then pedal locking systems will be de-activated by DSM to ACM, (then [PLS] will be unlocked from beta position 1), has stage 2 the another set of specific digital signal will set out to acceleration control module from the DSM, then after where we made\designed in such a way that ACM system will initiate command to ASCM, where ASCM limits the speed of vehicle up to designated speed of stage 2 (servo motor and electric linear actuator) System will lift the accelerating pedal up to(-30*inclination) as the point of action, [EASCM will analyzes the data produced before pre-initialization of commands ACM in stage 2, that will help EASCM to calculate the amount of torque & point of action that (external servo) should be performed to rotate in reverse axis to obtain the remaining stage 2 speed] upward as the second stage where the speed will decrease by 25km/h to max], In parallel for practical double safety procedures to ensure the non-malfunctions in other side DSM will initiate the digital signal command to locked throttle controller module with respect to ASCM speeds, where the LTC module initialize digital signal to ECU starts the deceleration maneuvers to obtain the stage 2 speed 1km/h drop in every 12 seconds up to designated speeds of stage 2, then after confirming the full scale deployment of ASCM with respect to stage 2 procedure then pedal locking system will be activated by DSM to ACM, then PLS will lock beta position 2, (PLS that will ensures the stability of external servo and holds in to ensure the greater accidental push & non malfunctioning of components and also to limit the pedal to max-speeds of stage 1).

[0040] procedure will set until user re-clamp their seatbelt properly, as procedure alarm goes on, the vehicle will be set only 25km\h as max speed.

WHAT AFTER IF USER OBEYS TO RESPECTIVE PROCEDURE AND REAPPLYING THEIR SEAT BELT, WHICH WAS REMOVED IN MIDDLE OF OPERATION. **(POST STAGE (EASCM MODEL 1))**

[0041] ACCELERATION INCREASING MANEUVER: though as stage 1&2 are two staged maneuver in last without any opportunities, the user should apply their seat belt, in loop process the DSM will definitely detect the seatbelt Authenticator space based on Authentication processing, DSM will double checks the authenticator, after that it will enter a staged maneuver, afterwards DSM will gives (DSEACM3) digital signal to ACM, where ACM will initiate the signal to pedal locking system, where PLS will unlocks primarily from beta positions, then after confirming[PLS procedure] DSM will deploys the set of (r+)digital signal[DSEACM] ACCELERATION CONTROL MODULE, where after [ACM] to (EASCM servo)then servo implanted to accelerator pedal, which external servo will make an declination angle of (+30*) with respect to **present point of action angle** (where we preset the safe declination angle in the stage process, where servo will make raising the pedaling capability of 1km/h in every 4 seconds up to designated speeds of post stage procedure), In parallel for practical double safety in other side DSM will initiate the (r+) digital signal command to locked throttle controller module with respect to ASCM speeds, where the LTC module initialize digital signal to ECU, where it starts the acceleration maneuvers to obtain the normal of speeding (pedaling capability will increases 1km/h in every 4 seconds up to designated speeds), with the help of [ACD] components as after its perspective angle, in general the pedal will be freed [P17].

[0042] even during acceleration procedure implanted servo motor will rotate in same axis of pedaling in accelerator, EASCM will records the data of acceleration & current axis of servo, for upcoming procedures that may be excited later on the basis of condition, then after increasing speed will be higher in response to maximum based on users then necessitated things afterwards DSM will again set to predefined loop [P11].

**THEN AFTER THIS QUESTION WOULD BE DEFINITELY RAISED WHAT IF UN
AVOIDABLE SOFTWARE BUG ON DSM SYSTEM OR ANY MECHANICAL
FAILURES IN ANY COMPONENT ARE DETECTED**

[0043] This question was raised, and I also faced during trials, so I also came up with the solved procedure to this problem

when user faces any malfunctions, that can be rectified by using emergency reverting procedures, the user should attain by opening the cabinet (where in general emergency reverting button is placed in special cabinet) by pressing emergency reverting button[E1], emergency reversion will be established[E2], circuit breaking of signals will be processed in parallel, that was pre-initialized to intimated by DSM,ACM<C during stage pre,1&2, (where it cuts of digital signal [EACMDS 1&2,LTCDS1&2] which is initially deployed to acceleration control module& DSM) [E3].

[0044] Then 11 minutes timer will be activated in parallel, where set of +R digital signals will be deployed by ERM, where ERM initiates commands to ACM to unlock the pedal locking system, then PLS will unlocks (will was plugged of) from beta positions [E4], and, which ERM will makes imitates declination angle by using same EASCM (ACM components) [then emergency reverting module will deploys set of digital signal [ACDDS] to ACCELERATION CONTROL MODULE [ACM]to EASCM & LTC, then after EASCM'S servo will make an

declination angle of +30° with respect to present angle of action stage 1&2 (where we preset the safe declination angle in the stage process where servo will make speed to raise the pedaling capability of 1km/h in every **4 seconds** up to designated speeds) ASCM components as after its perspective angle [E5], in parallel the LTC module initialize digital signal to ECU starts the acceleration maneuvers to normal[E5], Then after that, increasing speed will be higher in response to maximum based on users necessitated things, the procedure will be timed up to 11 minutes after using of emergency reverting button[E6], ERM is timer process and then after 11 minutes ERM resumes the DSM to process normally [ACCELERATION CONTROL MODULE] where signal lined up as general to normal procedures[E9].

[0045] where it could be habit of using this procedure to be bypassing the DSM principle, where emergency reverting button is placed in special cabinets which locks up the cabinet after single use of using emergency reverting button[E7], then in which cabinet will locked up until 2 hours then cabinet will be unlocked after stand by this procedure which can be avoided for illegal bypassing[E8].

THEN WHAT FOR NEW MODEL 2 MODIFICATIONS

[0046] for new model, implementation of internal servo motor in between accelerator potentiometer gears and accelerator pedal, which servo increases the stability of acceleration and deceleration procedures easily and rate of malfunctioning will be less and high accurately procedure can be done without any strenuous that will be model 2, in which pedal locking system no longer needed.

(i)WHAT IF USER TRIES TO MAKE AN ACCELERATION WITHOUT SEATBELT (PRE-STAGE IN MODEL 2)

[0047] as I mentioned above, if DSM Doesn't not detect any seatbelt authenticator space (seatbelt authenticator code) then DSM will make activates pre-stage procedure[P15], where in general, it alerts the user by primary analog signal as alarm[P16], then after the ignition procedure the DSM will deploys signal to acceleration control module, where ACM system will initiate command to IASCM, IASCM will limits the speed of vehicle up to designated speeds of Pre-stage.

[0048] In parallel for practical double safety procedures to ensure the non-malfunctions, in other side DSM will initiate the digital signal command to locked throttle controller module with respect to ASCM speeds, where the LTC module initialize digital signal command to ECU ELECTRONIC CONTROL UNIT, then ECU starts the deceleration maneuvers to obtain the pre-stage speed of 1km/h drop in every 12 seconds up to designated speeds of pre-stage(25km/h), if user obeys to re clamp the seat belt again, DSM system will resumes to normal [P17].

WHAT IF USER REMOVES THE SEATBELT IN THE MIDDLE OF PROCEDURE(IASCM)

STAGE 1 PROCEDURE

[0049] as mentioned above, if DSM does not detect the seatbelt authenticator space in the loop process, then DSM will make activates deceleration mechanisms, where in general it alerts the user by secondary analog signal as an alarm, thereby in the next 480 seconds, if driver indeed to drive, then user dare to face, where in stage 1 primarily of ACM(acceleration control module) will activate or cling, where ACM system will initiate command to IASCM, DSM will set out some specific digital signal to acceleration control module, where we made/designed in such way IASCM will lift the accelerator potentiometer gears and accelerator pedal up to (-15* inclination) upward as **from the point of action**, then IASCM will limits the speed of vehicle up to designated speed of stage 1, where by user can only accelerate up to stage1 speed [then basic speed will reduce to 50km/h] [analyzed data produced by IASCM, which helps to calculate the amount of torque & point of action that (internal servo) should be performed to rotate in reverse axis to obtain the stage 1 speed].

[0050] In parallel for practical double safety procedures to ensure the non-malfunctions, in other side DSM will initiate the digital signal command to locked throttle controller module with respect to ASCM speeds, where the LTC module initialize digital signal to ECU then ECU will start the deceleration maneuvers to obtain the stage 1 speed 1km/h drop in every 12 seconds up to designated speeds of stage 1 (50km/h).

[0051] DSM will set to another 480 seconds timer with continuous primary analog signal as an alarm, their after if user also behave in same act in the loop procedure, the DSM will enter to stage 2 process.

[0052] If any glitch occurs in particularly IASCM, then DSM will set out some specific digital signal to Activate potentiometer line breaker (where variable voltage signal from **acceleration pedal potentiometer** will be breaks temporarily) where we designed in such way that accelerators potentiometer line will breaks in parallel where by **fixed potentiometer module will activates in this fixed voltage signal will be applied, where throttle in vehicle will be fixed to max of 50km/h only**, speed will stay max applied until the user places their seatbelt properly.

IN STAGE PROCESS EVEN USER MAINTAINS A SAME BEHAVIORAL ACT THEN USER WILL FACE THE STAGE-2(IASCM)

[0053] As mentioned above, if DSM doesn't detect the seatbelt authenticator space in the stage 2 process, then DSM will make activates deceleration mechanisms where in general, it alerts the user by territory analog signal as an alarm, thereby in the next 480 seconds if driver indeed to drive again, then user dare to face, where in stage 2 primarily of ACM(acceleration control module) will activate or cling, where ACM system will initiate command to IASCM, then IASCM will limits the speed of vehicle up to designated speed of stage 2(**from the point of action**) by where user can only accelerate up to stage2 [the basic speed will reduce to 25km/h] DSM will set out some specific digital signal to acceleration control module 1 where we made\designed in such way IASCM will lift the accelerator potentiometer gears and accelerator pedal up to (-30* inclination) upward as **from the point of action**, [analyzed data produced by

IASCM, which helps to calculate the amount of torque & point of action that (internal servo) should be performed to rotate in reverse axis to obtain the stage 2 speed].

[0054] In parallel for practical double safety procedures to ensure the non-malfunctions, in other side DSM will initiate the digital signal command to locked throttle controller module with respect to ASCM speeds, where the LTC module initialize digital signal to ECU then ECU will start the deceleration maneuvers to obtain the stage 2 speed 1km/h drop in every 12 seconds up to designated speeds of stage 2 (25km/h) [P14].

[0055] If any glitch occurs in particularly IASCM, then DSM will set out some specific digital signal to Activate potentiometer line breaker(where variable voltage signal from **acceleration pedal potentiometer** will be breaks temporarily) where we designed in such way that accelerators potentiometer line will breaks in parallel where by **fixed potentiometer module will activates in this fixed voltage signal will be applied where throttle in vehicle will be fixed to max of 25km/h only**, speed will stay max applied until the user places their seatbelt properly.

WHAT AFTER IF USER OBEYS TO RESPECTIVE PROCEDURE AND REAPPLYING THEIR SEAT BELT, WHICH WAS REMOVED IN MIDDLE OF OPERATION [MODEL 2 MODIFICATION] POST STAGE.

[0056] ACCELERATION INCREASING MANEUVER: pedal locking system will be not present in model 2, but procedures will be same has mentioned in [0041], the procedure will resume as normally [P17&11].

THEN AFTER THIS QUESTION WOULD BE DEFINITELY RAISED WHAT IF UN AVOIDABLE SOFTWARE BUG ON DSM SYSTEM OR ANY MECHANICAL FAILURES IN ANY COMPONENT WHICH AS DETECTED

[0057] As when user faces any malfunctions, that can be rectified by using emergency reverting procedures, the user should attain by opening the cabinet (where in general emergency reverting button is placed in special cabinet) by pressing emergency reverting button[E1], emergency reversion will be established[E2], circuit breaking of signals should be processed, that was pre-initialized intimated by DSM, ACM<C during stages of Pre,1&2[E3], later on ERM will terminates the all commands of DSM, ACM<C [E4&5], then ERM resumes the normal driving experience[E6].

[0058] Then 11 minutes timer will be activated in parallel, the procedure will be timed up to 11 minutes after using of emergency reverting button [E7], then after 11 minutes ERM resumes the DSM to process normally [acceleration control module] where signal lined up as general to normal procedures[E9].

[0059] where it could be habit of using this procedure to bypass the DSM principle, where emergency reverting button is placed in special cabinets, which will lock up the cabinet after single use of emergency reverting button, then in which cabinet will locked up until 2 hours[E7],

then cabinet will be unlocked after stand by this procedure, which can be avoided for illegal bypassing[E8].



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Dated this on 7th day of September 2022

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APPLICANT SIGNATURE

CLAIMS

I claim:

10 Driver safety module system comprising

1. That, DSM system having a compatibility of real-time monitoring the seatbelt safety of the user, DSM will mainly work on the authentication principle, where secured code gets captured through infrared camera based on photochrom capability, then seatbelt authenticator is authenticated by DSM to ensure the safety of user.

15 **2. Pre stage and stage 1&2 Maneuver**

- a. That, ACM will have two factor acceleration controlling module, (locked throttle controller module& accelerator servos control module) where two modules are newest inventory, where eventually one type of module fails to operate, then another will work as backup, even if it in normal conditions, then modules will run in parallel.
- 20 b. That, DSM will have two factor acceleration controlling procedures, if user tries to make an acceleration without seatbelt, then [ACM] two factor acceleration controlling will run simultaneously to control the speed for designated safety protocol [25km/h] (PRE-STAGE SPEED).
- c. That, if user removes the seatbelt in the middle operations, based on the user responses, 25 module will decide the stages, then two factor acceleration controlling will run simultaneously to control the speed for designated safety protocol, in which it has two staged phases [50km/h to 25km/h] (STAGE 1& 2 SPEED).

3. Post Stage Maneuver

- a. That, Acceleration increasing maneuver will be only after the authentication procedure by 30 conforming re-clamping of seatbelt, in post stage the speed raising capability will be in from 1km/h in every 4 seconds up to designated normal safe driving speeds.

4. Emergency Reverting Module Procedures

- a. That, If DSM fails to operate or malfunction in system, emergency reverting module 35 [ERM] will be helping to keep procedures in hold, it temporarily resumes to normal mode (rectifying of malfunction will be up to 11 minutes), within the time user can be able to escape from the situation.

5. Accelerators Servo Control Module

- a. That, ASCM will play major role in recording the data of acceleration speed, current axis of servo & point of action during procedure, even during acceleration procedure the implanted servo motor will rotate in same axis pedaling of accelerator, during stage procedure ASCM will calculate the amount of torque & point of action that modified servo should be performed to rotate in reverse axis to obtain the stage speeds [in general ASCM will control the speed of vehicle] in which single modified servo will play triple roles.

6. Driver Learning Mode

- a. That, driver learning procedures is mode where DSM will be set to STAGE 1 procedure, where max speeding ability will be 50km\h, which will be safe max speed to learn the procedures.

7. Pedal Locking Module

- a. That, PLS is attachment/adjunct on accelerator pedal, which will push accelerator pedal in parallel with ASCM in acceleration control maneuver and also locks the pedal after reaching its max commended maneuver, in which PLS will ensure the stability of external servo and holds to ensure the greater accidental push or non-malfunctioning of components and also to limit the pedal to max-speeds of stage, after procedures PLS will resume the initial condition.

8. DSM Features & Local Data Management Systems

- a. That, DSM records the GPS, onboard acceleration speed, seatbelt usage, encrypted external and internal video as pre/post accidental conditions, even ASCM to DSM is capable to record the data of acceleration speed & current axis of servo, which is implanted on pedal, and where it also helps to analyze the data of malfunction.
- b. That, Safe speed decreasing & increasing maneuver is declared with valid reasons for respectively to express ways, or any dangerous movements and normal movements (50km/h to 25km/h).
- c. that through the respective DSM with different components, which can be implemented to present and upcoming vehicles.



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Dated this on 7th day of September 2022

TITLE: “DRIVER(USER) SAFETY MODULE USING INFRARED CAMERA BASED ON PHOTOCROM AUTHENTICATOR AND ITS APPLICATIONS”

FIGURE OF ABSTRACT

- 5 The present invention relates to driver safety module and its safety application with highly precise procedure, in which seatbelt protects the users from harsh conditions, so where seatbelt needs an real-time monitoring system for the User safety procedures, whereas DSM can control and co-ordinate the safety procedures, system monitoring and surveillance can be done, whereas in DSM, Authenticating space in seatbelts needs to be captured through photochrom based
10 infrared camera, in this procedure definitely authenticator space gets authenticated through DSM, to drive as normal, if not user will face some safety procedures by Continues alarms & designated safer decelerations’ and were by using ACM components and locked throttle controller including two factors safety protocol as for acceleration controller, even module provides an capabilities to escape from malfunction situation through Emergency reverting
15 module/protocol, and even some safe features like driver learning mode, Realtime external and internal camera surveillance, GPS, onboard acceleration speed, seatbelt usage, highly secured encrypted video as pre/post accidental conditions even in harsh damages, higher encrypted local data management systems.

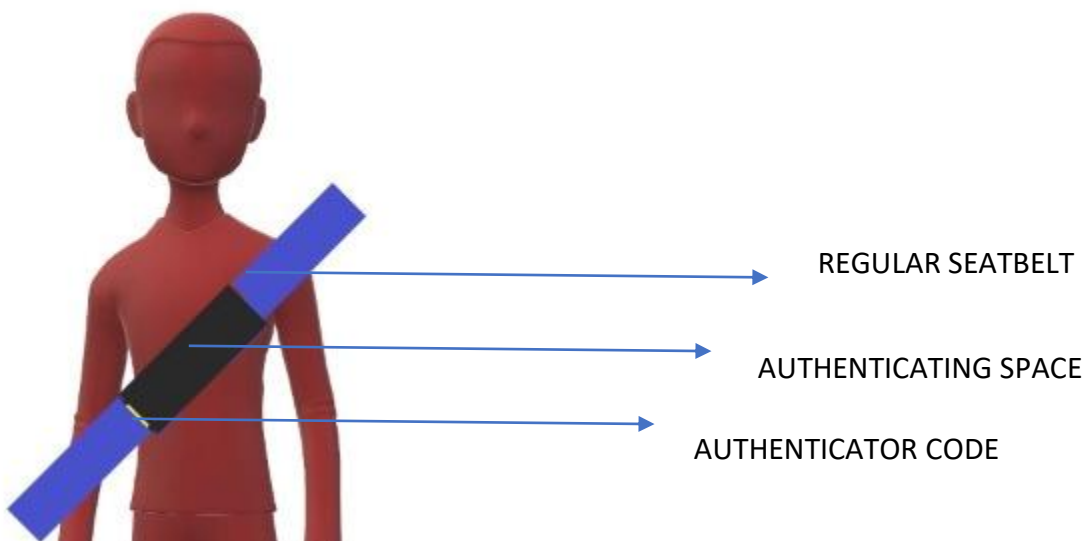


Fig. STRUCTURAL ARRANGEMENTS OF AUTHENTICATING SPACE

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