SMART STRETCHER SYSTEM

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ABSTRACT-The present subject matter relates to a smart intelligent stretcher system comprising a support frame; with foldable legs attached with four wheels such that the foldable legs are adapted to fit below the support frame. Further, the system includes spinning blades attached with four corners of the frame with proximity sensors placed above portion of the wheels such that the sensors detect hurdles in the path and change its part accordingly; an image capturing device placed on the frame ;an antenna placed to the system to catch signals; a brushless DC motor placed in the spinning blades and a computer system including cloud storage stored to the captured data of the sensors and the image capturing device, wherein the cloud storage controls the sensors and the image capturing device.

Keywords- Soldiers usage, health, automatic, comfortable, efficient, portable, first come first service, flying supported, hard terrain

Introduction: - introduce the magic and expertise of technology and build a remote control along with self-intelligence "CARRIER" which may carry the wounded sider to the destination. The idea is to reduce extra 2 soldiers work in this process. The present invention relates to a smart intelligent stretcher system for providing treatment to the patients more rapidly and easily without affecting other ones has been introduced. In an embodiment of the present subject matter relates to a smart intelligent stretcher system comprising a support frame; a plurality of foldable legs attached with four wheels such that the plurality of foldable legs is adapted to fit below the support frame. Further, the stretcher system includes a plurality of spinning blades attached with four comers of the support frame; a plurality of proximity sensors configured to place above portion of the wheels such that the plurality of proximity sensors detects hurdles in the path and change its part accordingly; and an image capturing device adapted to place on the support frame. The image capturing device is provided for capturing its surrounding environment. In addition, the stretcher system includes an antenna configured to place the stretcher system to catch signals; a brushless DC motor adapted to place in the plurality of spinning blades ; and a computer system including cloud storage which is configured to store the captured data of the plurality of proximity sensors and the image capturing device, wherein the cloud storage controls the plurality of proximity sensors and the image capturing device. Accordingly, the smart intelligent stretcher system can be both solar powered or electrically charged according to the situation. The brushes DC motor is used to fly 1-2 meters above the ground in extreme rough terrain. In addition, the smart intelligent stretcher system has the technology of speech recognition of authorized people who may have the control on the stretcher system. he foregoing summary is illustrative only and is not intended to be in any way limiting. ln addition to the illustrative aspects, embodiments, and features described above, further aspects, embodiments, and features will become apparent by reference to the drawings and the following detailed description.

OBJECTS OF THE INVENTION: - The principal objective of the present invention is to provide smart intelligent stretcher system for providing treatment to the patients more rapidly and easily without affecting other ones have been introduced. Another object of the present invention is to reduce the extra effort energy, and calamities. Yet another object of the present invention is to provide the magic and expertise of technology and build a remote control along with self-intelligence carrier which may carry the wounded person/patient to the destination. Yet another object of the present invention is to provide simple and cost effective smart intelligent stretcher system. These and other objects and advantages of the present subject matter will be apparent to a person skilled in the art after consideration of the following detailed description taken into consideration with accompanying drawings in which prefeed embodiments of the present subject matter are illustrated.

Detailed description The present subject matter relates to smart intelligent stretcher system for providing treatment to the patients more rapidly and easily without affecting other ones has been introduced. Reference may be made to Figures illustrating perspective, diagrammatic views of smart intelligent stretcher system, in accordance with an embodiment of the present invention.

Mechanical -The smart intelligent stretcher system comprises a support frame consisting of a size of i950X630X820mm load bearing capacity is 160 kg such that the support frame is made up of carbon fibre material to reduce its weight. The support

frame surrounded by slot for 'belts. Further, the present invention includes a plurality of foldable legs configured to attach with four wheels which are adapted to fit below the 15 20 25 l0 support frame, wherein the four wheels are formed in cylindrical shaped for uneven terrain and capable of dealing with friction.

ELECTRICAL-The present invention includes a proximity sensors configured to place above portion of the wheels such that the plurality of proximity sensors detects hurdles in the path and change its part accordingly, and also the plurality of piezoelectric sensors is to measure the pressure of wheels and a a plurality of spinning blades configured to attach four comers of the support frame. The plurality of spinning blades is the wings to the intelligent stretcher system. Further, the smart intelligent stretcher system includes an image capturing device i.e. infrared camera, adapted to place on the support frame; an antenna configured to place the smart intelligent stretcher system to catch signals; and a brushless DC motor adapted to place the smart intelligent stretcher system. The infrared cameras are provided to capture its surrounding to the person sitting in a particular place to control it using a RC to make it reach its destination. Accordingly, grooves are configured to set the camera and sensors where ever needed in the smart intelligent stretcher system. The brushless DC motor is used to fly 1-2 meters above the ground in extreme rough terrain. Before the take off the wind speed, atmospheric pressure has to be measured and the balance of the support frame is to be maintained in the air accordingly. In the smart intelligent stretcher system is used both solar powered or electrically charged like battery powered, according to the situation. Further, the smart intelligent stretcher system includes a computer system having a cloud storage which is configured to store the captured data of the plurality of proximity sensors and the image capturing device. The cloud storage controls the plurality of proximity sensors and the image capturing device. The smart intelligent stretcher system has the technology of speech 15 25 10 recognition of authorized people who may have the control on the smart intelligent stretcher system. In accordance with an embodiment of the present subject matter relates to the speed of infrared cameras cannot be determined by anyone who is not present in the surrounding. such that the concept of unsupervised machine leaming is ' used to determine the correct speed of the stretcher system. The unsupervised ml is a sub category of human supervision. In this the machine leams things on its own after facing the situation number of times. For example, if the surface has less friction the sensor may send this info to the computer system such that the computer System processes it and command the wheels to move fast and if the surface is uneven then vice-versa.

Accordingly, in this stretcher system can be worked in the concept of convolution neural network (CNN). The stretcher system includes a weight detected sensor which can be detected the weight and sending signal to the computes system such that the network of CNN starts to work and the stretcher system heads back to the destination for aid. It can also have the linear regression or the laser technology fit in it which may catch a signal from a near transmitter according to category and can reach up to the destination by setting up a map to track for it. Similar way to the AI feature is used in the Google maps these days. All of them can have trackers in them so that their location can be seen by the users in need. For example, all the data is used and stored in cloud like in Amazon Web Service (AWS) or Hadoop and sockets can be made by making self-made connection ports like Transmission Control Protocol (TCP) made by USA for its defence force which may secure the channel of communication and reduce the chance of its compromise. In accordance with an embodiment of the present subject matter relates to the computer system uses as Raspberry pi as its CPU as it has very easy and portable interfacing and can control the sensors, cameras very easily and also 15 20 25 10 inbuilt open cloud storage which is very useful. Also, inbuilt libraries in it which support ml like tensor flow, keras,skleam, matplotlib, and etc. It can also be cost effective. We can test and train our modules accordingly so that they can work properly. Accordingly, the stretcher system includes an accelerometer or piezometer sensor which is provided to detect the amount of vibrations for the support frame may face and in case of vibrations exceeding a particular limit the pi can be programmed to start the motor of the propeller as to avoid the jerks and the directions can be governed by RC where location of it can be shared through GPS to a person in the destination who can also use 3D glasses to visualize the location. In self-driving mode radio signal from the destination to the support frame can be send and received such that it follows it and reach there. For this LEO or geostationary satellites are provided in the loop for good communication and navigation purpose. Apart from the above, in the smart intelligent stretcher system includes a plurality of sensors consisting of radar needed sensors which are configured to communicate in bad weather conditions specially; pulse sensors which are configured to measure pulse and heartbeat of the patients/users; balance sensors which are configured to maintain the balance of the carrier in the air; battery level sensors which are configured to measure the battery level of the support frame; non-contact thermometer which is configured to detect the surface temperature without physical contact and heat sensors which are configured to detect the heat generated by the support frame. In accordance with advantages of the present subject

matter as compared with the existing devices. In the present invention is provided to save time, lives, energy as such as possible and to by fractions lessen the hard work that our soldiers/users do every day to keep us safe. Also, the medical staff can provide 'service while being safe.

SCOPE So if this finds a way a step ahead in the field of military then this may sat another milestone in the human history. The carrier can play an important role in shaping the result of the war zone. It will be further appreciated that functions or structures of a plurality of components or steps may be combined into a single component or step, or the functions or structures of one-step or component may be split among plural steps or components. The present invention contemplates all of these combinations. Unless stated otherwise, dimensions and geometries of the various structures depicted herein are not intended to be restrictive of the invention, and other dimensions or geometries are possible.

Diagram description: - Fig. 1 illustrates perspective view of smart intelligent stretcher system, in accordance with an embodiment of the present invention; and Fig. 2 illustrates diagrammatic view of smart intelligent stretcher system. The figure depicts embodiments of the present subject matter for the purposes of illustration only. A person skilled in the art will easily recognize from the following description that alternative embodiments of the structures and 15 o 10 methods.
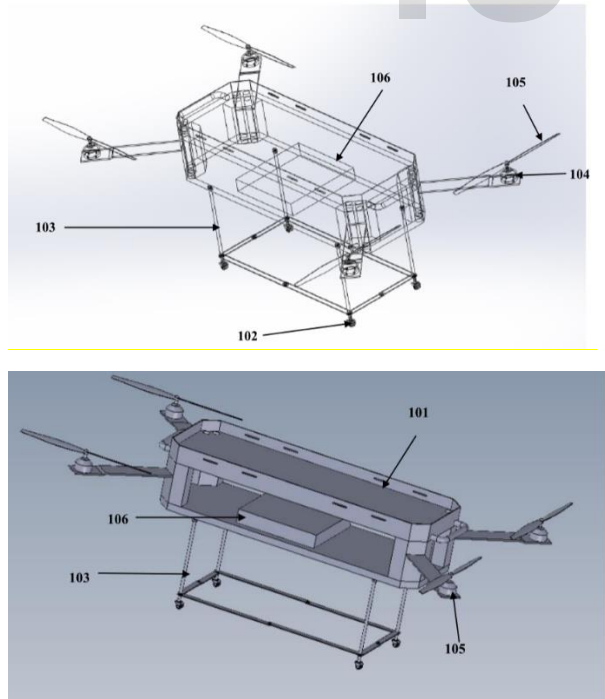
Advantages: - **:** So before concluding I would like to say the main motive of this is to save time, lives, energy as such as possible and to by fractions lessen the hard work that our soldiers do

every day to keep us safe. The material used to be made in the country itself to reduce its cost and I think by the designated students so that the youth may increase its credibility. As it is said "Youth is the future of any country" with a tag of MADE IN INDIA

Also using techniques like this we can use it for surveillance robots which may do some of the works of guarding in high altitudes like Siachen glacier during winters or great Thar desert in summer where temperature may reach up to -50 or 50 respectively also to find dead bodies of the soldiers quicker. So that little comfort can be provided to the soldiers in guarding the borders nonstop till death.

Refernces–

1. ES2733637T3 Colleen Q BlickensderferBrian M MagillTimothy R WellsPreeti SarDerick C RobinsonNicholas V ValentinoMichael D ClarkMotorized ambulance stretcher with an automated stretcher control system
2. LI XIAORONG Intelligent stretcher systemCN105769457A
3. CN203736417U 7/30/2014 Remote control stretcher SUN YAN
4. US8025325B1 2011-09-27 All terrain retrieval vehicle for medical emergencies Brian E. CarrierAnthony Wiles
5. WO1998044991A1 1998-10-15 All terrain fire-fighting vehicle Bonnie L. CarrierBrian E. Carrier
6. US10610427B2 020-04-07 Military stretcher system Brian MacdonaldDijon JohnsonJason StephensonMichael HinchyGlenn McKayPaul Alexander CeprnichKirby James NankivellJack Nelson Beet
7. Introduction of Modern Stretchers in Armed Forces for Improving Casualty Evacuation in Field with Special Reference to Casualty Evacuation in Mountains https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4922981/
8. BAE Systems to unveil 'robot stretcher' designed to evacuate wounded troops from battlefields https://www.telegraph.co.uk/news/2017/09/07/bae-systems-unveil-robot-stretcher-designed-evacuate-wounded/
9. Military Nursing Research: Translation to Disaster Response and Day-to-Day Critical Care Nursing https://www.sciencedirect.com/science/article/ab