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IMPLEMENTATION OF RESOURCEFUL SYSTEM FOR NOTIFYING CHILD IN INFANT SEAT

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ABSTRACT:

As thermoregulatory system of child is not well developed, this condition might lead to hyperthermia or else heatstroke which can be critical. A child presence detection scheme based on a grouping of optical detector, mechanical switch as well as temperature sensor was reported. An easy as well as low cost solution for child-left-behind difficulty in a car is presented. A novel capacitive sensor has been expanded to notice presence of child in an infant seat. We put forward an easy and compact capacitive sensor that can be positioned in an infant seat to become aware of presence of a child. The projected system moreover has a vehicle ignition monitor to authenticate presence of driver inside a car. It moreover has a temperature sensor to keep track on existing temperature inside car. An infant seat by means of a child and projected capacitive sensor and measurement and control unit are revealed in child presence detector as well as warning system. A GSM modem is employed to alert driver or parents as soon as a child left in car in infant seat is noticed and car was found turned-off. The capacitive sensor as well as measurement and control unit can be kept close so that they can be packaged as a particular unit. A measurement and control unit that measures capacitance of sensor, by means of a sigma-delta capacitance to-digital converter, as well as generates a warning signal based on sensor data along with engine status has moreover been developed. Output of capacitance-to-digital converter will point towards convinced changes in capacitance of sensor in presence of a child in infant seat. The measurement and control unit initially generates an audio alarm and if no one acts inside a

preset time, it instructs a GSM modem to call to liable persons to assist the child.

Keywords: Child presence detection scheme, Capacitance-to-digital converter, GSM modem, Measurement and control unit.

1. INTRODUCTION:

Detection of seat occupancy is application of capacitive sensing principle. In vehicles, information concerning the presence of passengers or else an object can help to get better automotive safety. As child completely depends on elders but, accidentally, in a busy schedule, the driver otherwise passengers might forget to take the child who might be sleeping in infant seat, generally kept in back seat of car [1]. Such incidents can be prohibited by sensing presence of a child quickly after a car is turned-off and subsequently generating/sending an appropriate warning signal to driver or parents who can take appropriate action to save child. We put forward an easy and compact capacitive sensor that can be positioned in an infant seat to become aware of presence of a child. The projected system moreover has a vehicle ignition monitor to authenticate presence of driver inside a car. It moreover has a temperature sensor to keep track on existing temperature inside car. A GSM modem is employed to alert driver or parents as soon as a child left in car in infant seat is noticed and car was found turned-off. Principle of procedure of capacitive sensor, measurement system employed details of prototype sensor as well as warning system developed [2]. The measurement and control unit initially generates an audio alarm and if no one acts inside a preset time, it instructs a GSM modem to call to liable persons to assist the child.

2. METHODOLOGY:

Unfortunate, incidents moreover happens in a variety of parts of world. Once a car is parked, maintain its window glasses blocked, temperature in car boost speedily even with atmospheric temperature of 21˚C. As thermoregulatory system of child is not well developed, this condition might lead to hyperthermia or else heatstroke which can be critical. A child presence detection scheme based on a grouping of optical

detector, mechanical switch as well as temperature sensor was reported. Optical or else thermal sensors are not well appropriate for this as it might not become aware of when a child is wrapped in a blanket or else clothes. An electric field sensor to become aware of infants sitting in backward position in infant seat in a car has been reported. A capacitive seat occupancy detection scheme that makes available occupancy information towards an airbag control unit has been reported. In these systems, sensing electrodes are positioned in the car seat as it is to sense adult occupancy. Thickness of infant seat obtainable in market is not unchanging consequently; it is tricky to sense presence of a child by means of these sensors consistently [3]. Such capacitive/electric field systems are not obtainable in all the cars and generally, if obtainable, it is not installed in backseats of cars where likelihood of forgetting a child is high.

3. AN OVERVIEW OF PROPOSED SYSTEM:

An easy as well as low cost solution for child-left-behind difficulty in a car is presented. A novel capacitive sensor has been expanded to notice presence of child in an infant seat. A measurement and control unit that measures capacitance of sensor, by means of a sigma-delta capacitance to-digital converter, as well as generates a warning signal based on sensor data along with engine status has moreover been developed. The measurement and control unit initially generates an audio alarm and if no one acts inside a preset time, it instructs a GSM modem to call to liable persons to assist the child [4]. A prototype capacitive sensor as well as measurement and control unit have been build and tested. Presence of a child in infant seat can be precisely detected and suitable warning signal can be produced to save the child.Fig1 shows child presence detector as well as warning system. An infant seat by means of a child and projected capacitive sensor and measurement and control unit are revealed in child presence detector as well as warning system. The capacitive sensor as well as measurement and control unit can be kept close so that they can be packaged as a particular unit. The measurement and control unit has a capacitance-to-digital converter whose input terminals are associated towards capacitive sensor. Output of capacitance-to-digital converter will point towards convinced changes in capacitance

of sensor in presence of a child in infant seat. Capacitance-to-digital converter data is specified to a controller in measurement and control unit. Controller moreover takes data from integrated temperature sensor as well as engine. Temperature sensor gives temperature inside car while engine status is necessary to make out whether car is running or turned-off. Controller employs an easy threshold based algorithm to make a decision presence of a child in infant seat based on data from capacitance-to-digital converter. As soon as controller gets information that the engine is turned-off, it instructs capacitance-to-digital converter to compute capacitance and make available data. If controller discovers that a child is present in infant seat, it makes an easy to hear alarm after. This procedure show again for every 1 min until child is removed from infant seat [5]. If the child is not taken from infant seat still 7 min subsequent to engine has been turned off, controller turns ON \GSM modem and call to phone number of driver. In case of no reply from driver it will call to parents. And, if still no reply it will call to a help number and pass a preloaded message. This message will enclose the vehicle number, address as well as phone number of instantaneous person to be contacted, temperature within the car, and so on to take suitable action by authorities. The phone numbers can be effortlessly altered and loaded into unit. The time at which unit commences an audible alarm and dialling a number is adjusted depending on user preference.

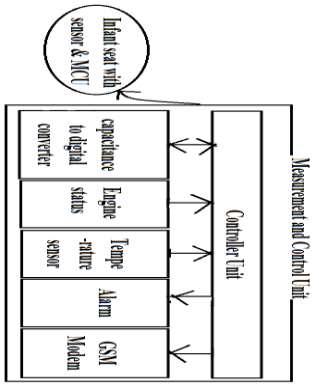

Fig1: An overview of capacitive child presence detector system

4. CONCLUSION:

As child completely depends on elders but, accidentally, in a busy schedule, the driver otherwise passengers might forget to take the child who might be sleeping in infant seat, generally kept in back seat of car. We put forward an easy and compact capacitive sensor that can be positioned in an infant seat to become aware of presence of a child. The projected system moreover has a vehicle ignition monitor to authenticate presence of driver inside a car. It moreover has a temperature sensor to keep track on existing temperature inside car. Principle of

procedure of capacitive sensor, measurement system employed details of prototype sensor as well as warning system developed. An infant seat by means of a child and projected capacitive sensor and measurement and control unit are revealed in child presence detector as well as warning system. The capacitive sensor as well as measurement and control unit can be kept close so that they can be packaged as a particular unit. Controller employs an easy threshold based algorithm to make a decision presence of a child in infant seat based on data from capacitance-to-digital converter. A GSM modem is employed to alert driver or parents as soon as a child left in car in infant seat is noticed and car was found turned-off. A measurement and control unit that measures capacitance of sensor, by means of a sigma-delta capacitance to-digital converter, as well as generates a warning signal based on sensor data along with engine status has moreover been developed.

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