Air Danshin's shake test dealt only with side-to-side motion and most earthquakes are not limited to a two-dimensional plane. Three centimeters of levitation will only protect a house from earthquakes that don't rise higher than three centimeters. Never mind the question of what would happen to a floating house hit by a tall wave of a quake. It would likely slip right off its foundation. Or, conceivably, a strong tornado might more easily carry the structure off to Oz.

And the most pleasant thing for ordinary Japanese is the fact that building a house that can "take off" at the right time will be somewhat cheaper than strengthening the entire building with seismically resistant materials and structures (traditional technology for the Land of the Rising Sun). In the innovative version, you will only have to spend money on an earthquake-resistant foundation and it will be necessary to plan just such a creation option in advance, because it will definitely not work to "slip" an airbag with sensors and a compressor under the finished object.

Another problem is that the first tremors that would activate the system may very well be the biggest, most destructive tremors of the earthquake. The airbag, were it able to inflate, might be pushing up against the rubble of an already damaged house.

Along with such introductions, special building materials and glass with a special steel thread are used, because they are the most fragile element in the construction of the building.

References:

1. Abrams Michael. Made in Japan: Earthquake-Proof Homes. 2012. URL: https://www.asme.org/topics-resources/content/made-in-japan-earthquake-proof-homes

VEHICLE THEFT PREVENTION

OLEKSII HUBARKOV, student
OLENA O. CHEVYCHELOVA, Senior Teacher, Language Adviser
Kharkiv National Automobile and Highway University

Every car owner strives to protect his car from thieves. For this purpose, various security systems are used to prevent car theft or damage. Modern security systems perform not only anti-theft function and serve to monitor the car in passive mode, but also can be active protection mechanisms. For example, they can turn off the car engine in a minute after the theft, as well as turn on/off sound-and-light alarms (emergency lights, parking lights and main light) during the required period of time. Or in winter they can pre-heat the engine by means of the signal received from the remote key fob. There are 4 main classes of security complexes, namely:

- satellite-based monitoring systems that use GPS systems;
- immobilizers, which are usually factory-fitted;

 car alarms or audible sirens, which are additionally installed in cars to increase anti-theft functions and operating efficiency;

 mechanical anti-theft systems (blockers), which mechanically lock the gearbox, hood, steering shaft, wheels, etc.

Moreover, all four classes of anti-theft systems can be functionally combined in a single car security system or can be used separately.

Let us consider the features of anti-theft security systems for cars according to the elements of crime:

 simple (static code) systems, which use a single pre-recorded code. A car equipped with such a system can be stolen by thieves using simple code grabbers (signal scanners), so such systems are now presented only in the low price segment;

 systems with a dialog code, which imply the identification of the owner using signals that change according to a certain algorithm and carry out a sequential exchange of signals between the key fob and the central unit of the security system. Such anti-theft car systems cannot be “broken” with the help of a code grabber, or with the help of other methods of intellectual hacking. Thus, the protection of the car is at a very high level.

All anti-theft systems can be divided into two types:

 factory-fitted alarm systems;

 systems that are additionally installed.

The former systems are installed by manufacturers to provide the safety device as standard equipment across the models. As a rule, a standard system does not have variety of options and it only provides warning signs. The advanced functions can be available in the additionally installed systems. This depends on the model and cost.

Let us analyse the structure and operational principals of alarm systems. All components of an alarm system can be divided into three types:

 actuators;

 readers (sensors);

 control unit.

The alarm is switched on/off (arming/disarming) using the key fob. In standard alarm control systems, signaling management is connected to the central locking control and it goes in with the ignition key in a single device. The immobilizer sign is also there. However, these are completely different systems and they work independently of each other.

Car alarms that are used in anti-theft systems are much more effective than regular security systems. Let us analyse auxiliary alarm functions, which besides the main security function involve some useful applications. For example, such as:

 remote engine start. The function of engine warming-up is especially convenient in winter. You can start the engine remotely and prepare it for the trip in time;

 remote power window control. Automatic full up of the window lifters occurs when the car alarm is armed. There is no need to remember to close all the windows;

 car security when leaving its engine running. This function is useful when leaving the car over a short period of time;

 satellite tracking (GPS/GLONASS). Modern multifunctional anti-theft systems are connected to active navigation systems such as GPS or GLONASS. This is an extra level of security to the car;

 blocking of engine operation. Advanced versions of security systems can be equipped with a remote engine stop system;

 managing car alarm and other functions using the smartphone. Modern systems allow you to control all functions using a mobile phone. The availability of this option depends on the configuration and model of the alarm. The control is carried out using a special application.

Let us consider the main manufacturers of car alarms. Currently on the market there are many models of satellite-based car alarms from different manufacturers, but the best of them are STARLINE and PANDORA in the affordable price segment. These alarm systems have a dialog code that has been tested many times.

It should be remembered that any security system of the highest level as well as blockers does not guarantee 100% theft protection. It just increases the period of time required for car theft, time difference between 2 minutes and 3 hours is enormous and during this time the owner can do something to prevent it.

References:

1. Захист автомобіля від угону. URL: http://avtosovet.com.ua/

2. Типи автомобільних сигналізацій автосигналізації: історія винаходу. URL: https://www. refs.co.ua/51716-Tipy _avtosignalizaciiy.

3. Типи протоколів радіозв'язку в автомобільній електроніці. URL: http:// www.avtgid.pl.

COMPUTER TECHNOLOGIES OF THE FUTURE GENERATION

ANDRII ISTOMIN, student
OLGA SLATOVA, Senior Teacher, Scientific Adviser
OLENA ANISENKO, Senior Teacher, Language Adviser
O. M. Beketov National University of Urban Economy in Kharkiv
MARTIN HORN, *Language Instructor*
South-Moravian Educational Center (Brno, Czech Republic)

Computer technologies are constantly evolving and advancing at a rapid pace. With the advent of artificial intelligence, quantum computing, and other emerging technologies, we are on the verge of a new era of computing. In this