



RCAR

JUNE 2017 NEWSLETTER From Secretary General

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Welcome to my first RCAR newsletter!

We are gradually coming to grips with the RCAR processes and procedures. Thank you to the RCAR members who have contributed to this newsletter and for the highly organised documentation of our outgoing Secretary General, Wilf Bedard.

We haven't strayed too much from the format of previous newsletters, but intend to introduce some changes to the procedure in future to enable the compilation process to be simpler for both our Administrator, Tracey Maurici and RCAR contributing members. This will include standardising the submission document formats and the way we handle images.

My contact for any feedback or questions is rmcdonald@rcar.org

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PRODUCTIVITY COMPARISON: TYPES OF CLAIMS INSPECTION



In Brazil, the insurance market undergoes a modernization process regarding the claims inspection performed by the insurance company's adjuster. As the country has a large territorial extension and high level of traffic, the adjuster's travel to the vehicle that needs to be inspected is becoming unfeasible.

With that in mind, insurers are increasingly using a process called "inspection by image". It is a process that prevents the adjuster from going to the place of the injured vehicle. The body shop sends the photos of the vehicle and the damages caused in the accident, and the adjuster evaluates these images and approves the budget without having to go to the place.

For this reason, CESVI BRASIL carried out a research on the characteristics of each type of claims inspection and compared the productivity of each one. The inspections studied were: "on-site inspection", "inspection by image" and "inspection with analysis by image".

In this comparison, CESVI BRASIL studied the following items:

- Time of travel or time saved in the inspection that does not require travels;
- Productivity of the professional that performs each type of inspection;
- Inspection times;
- Number of steps for each type of inspection.

Results of the study

Path

The on-site inspection, as expected, was the type of inspection that most burdened the adjuster's time, spending almost 9 hours of his/her time on a 24-hour total analysis. That is, 37% of the time was spent just to get to the place where the vehicles were, totaling more than 283 km. The inspections by image do not include travel time.

Productivity

Again, the on-site inspection was the least productive method, since the travels required too much time. In the on-site inspection, 63% of the time was productive. In the other methods, the productivity was 100%, without the adjusters' down time on the way to the body shop.

Quantity of adjusters for the same number of inspections

If done by the "on-site inspection" method, these same 144 inspections would require 8 adjusters to complete the work at the same time.

Benefits for the insured and the body shop

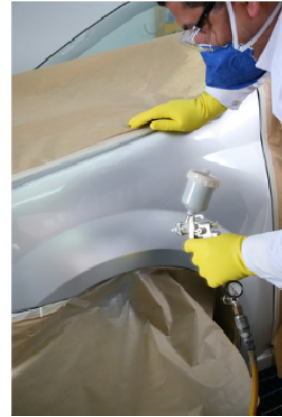
The main benefit for the insured and the body shop is the delivery time of the vehicle, which in the method of inspection with analysis by image allows a saving of two working days compared to the method of on-site inspection. Image-based methods reduce waiting time for budget approval, the time the vehicle stands in the body shop waiting for the approval for the repair, and consequently reduce the insured's waiting time for his/her repaired car.

With this study, CESVI BRASIL aims to demonstrate to the insurance and repair markets the differences of each inspection method available in Brazil.

NISSAN TECHNICAL MANUALS



CESVI BRASIL
Centro de Experimentação e Segurança Viária



Beginning in July 2016, CESVI BRASIL has developed technical manuals for NISSAN automotive repair process. The goal is to support car dealers and assist technicians, painters and body work professionals in carrying out excellence work.

CESVI has developed three initial projects of technical materials to assist in the automotive repair of specific vehicles. They are contents that aim to improve the work of the network of dealers in Brazil through detailed explanations with photos, stages and processes of body work and painting.

The contents were as follows:

BODY WORK MANUAL – NISSAN MARCH and NISSAN VERSA

For being compact models with a high volume of sales in the Brazilian market, Nissan March and Nissan Versa were the two cars initially selected for this work.

For the body work manuals, NISSAN made available both models of vehicles to the CESVI BRASIL's repair shop, where they created the step-by-step processes of replacing more than 30 metal parts of the body of each model.

During the works, CESVI BRASIL used more modern methods of replacing metal parts, demonstrating through photos and explanatory texts the most appropriate ways to replace parts of the car's body, as well as demonstrating and explaining the need for sheet protections, removal of weld points, types of welds used by region and suitable forms of fitting of these parts.

REPAINTING MANUAL

CESVI BRASIL also developed a complete technical manual on automotive repainting, consisting of layout suggestions for repair shops, adequate methods and environments for the realization of painting, appropriate supplies for each stage of painting and even correct forms of protection for this stage of finishing.

Another important point for the current Brazilian repair market, which is also addressed in this content, refers to the fast repair process, in which appropriate painting supplies, adequate spaces and specific processes are differential to large body shops on the question of profitability – a method that still needs to be more widespread among automakers in Brazil.

Therefore, CESVI BRASIL contributes to the improvement of the repair chain and assumes its commitment to the improvement of the automotive repair market.

ARTICLES FROM CESVI MEXICO

Latin NCAP announces Ricardo Morales Rubio as new President of the Board of Directors

The members of Latin NCAP have elected Ricardo Morales Rubio as new President of the Board of Directors for the next three years. Ricardo Morales Rubio succeeds María Fernanda Rodríguez who served as President of the first Latin NCAP's Board of Directors since 2014 and who will continue to represent the Fundación Gonzalo Rodríguez and the Road Safety NGOs at the Board.

For his part, Ángel Martínez Álvarez, CEO of Cesvi México, was elected as member of the audit committee, made up of Daniel Coen del Automóvil Club from Costa Rica; Jeanne Picard of FICVI as well as Stefan Larenas from ODECU.

Meanwhile the Directive Board was integrated by the representatives of Automóvil Club de Colombia – BOD Ricardo Morales Rubio; María Fernanda Rodríguez Bongoll from Fundación Gonzalo Rodríguez; Marcelo Aiello of Cesvi Argentina, Peter Vicary-Smith from ICRT besides Maria Inês Dolci of PROTESTE.

While the Board of Directors was composed of Automobile Club of Colombia - BOD President, Gonzalo Rodríguez Foundation, PROTESTE, Cesvi Argentina and ICRT.

It should be recalled that the main sponsors of Latin NCAP are the Interamerican Development Bank, Bloomberg Philanthropies, FIA Foundation, Global NCAP and ICRT.



CESVI MEXICO RECEIVES AND PROGRAM "PILOTOS X ROAD SAFETY" RECOGNITION IN THE FIA AMERICAN AWARDS 2016

The president of the International Automobile Federation and UN Special Envoy on Road Safety, Jean Todt, spearheaded the delivery of the 2016 FIA Americas Awards, held at the Autodromo Hermanos Rodríguez in Mexico City, at a gala which recognizes Most outstanding in sports (karting and major categories), as well as mobility in the American continent.

"It is an honor to start the year with you. Thank you for the support we have received from Mexico, both in the field of sport with the organization of major international events and in road safety," Todt said in his message. "America is a region that is very passionate about motor sport and we are happy for the commitment that the parties have shown to join efforts," he added.

In this context, the organizing committee praised the work of the Pilots for Road Safety project, which since August 16, 2012, has added the efforts of the Federal Government through the Ministry of Health, the International Automobile Federation (FIA) Mexico, Escudería TELMEX, Mexican Red Cross, AMIS, Cesvi Mexico, UNAM, Calos Slim Foundation, Telcel, IMESEVI, Fox Sports, CONAPRA, CIE Foundation, NEC, Cinema Park and Teletón; All united with the objective of creating a road culture that would save more than 60,000 lives in Mexico in the remainder of the decade.

Thus, as part of the project, Cesvi Mexico received a recognition that the letter says "For its invaluable collaboration in favor of road safety in Mexico," which was received by Ángel Martínez Álvarez, General Director of the Experimentation Center.

In this regard, the engineer Martinez said that it has been an honor for Cesvi Mexico to have been distinguished by the highest authority of the world motorsport as it turns out to be the FIA. "This recognition commits us to continue working from our workplace to continue promoting the best practices in road safety."

It can be said that Cesvi Mexico has been in the market for 20 years, promoting best practices in road safety through active participation in local and international forums, elaborating expert reports on traffic events, developing prevention campaigns, conducting road audits, Insurance, advising carriers for the implementation of the ISO 39001: 2012 Management System to prevent traffic accidents in their fleet, among others.



Ángel Martínez receives a prize from the FIA AMERICAN AWARDS.

ARTICLES FROM CESVIMAP (SPAIN)

CESVIMAP trains appraisers overseas: now in the Philippines

CESVIMAP has given **training to the MAPFRE Insular network of automobile appraisers** in the Philippines. It also analysed a number of repair shops to categorise them.

As an expert centre in the [valuation of damage to vehicles](#), CESVIMAP is frequently called upon to train professionals related to appraisal and accident claim management. Although most of the contents are custom-prepared to meet the needs of each client, they generally cover analysis of the different types of damage, repair processes, valuation of the bodywork and paintwork operations, taking into account the severity of the damage and the materials (steel, aluminium, plastics...); along with the final checks on the vehicle's working order and finish quality. The practical part of the training has been carried out with real accident-damaged vehicles. The CESVIMAP technicians have visited a number of repair shops to get to the know the characteristics, practices and habits of the Philippine market, so as to be in a position to produce reports on the situation and on opportunities for improvement.

So this country joins the long list of countries where CESVIMAP has given appraisals training. Alongside practically all the countries of Latin America, on the list are Poland, Saudi Arabia, South Korea, Angola, Turkey, China and Indonesia. It has undertaken process audits in these countries, giving training for the management of the appraisals team or *coaching*.

CESVIMAP offers its experience and know-how so that professionals can adapt to the requirements of their clients, mainly insurance companies, with regard to passenger cars, industrial and agricultural vehicles and motorcycles. Given that professionals of any sector have to evolve constantly, training becomes a key tool for development, and all the more so for the automobile appraiser, whose decisions are conditioned by the technological advances of manufacturers.

This training follows on that given for the **National Police School of Spain**, through the CESVIMAP Chair at the Universidad Católica de Ávila.

Within the framework of the Seminar "Illicit traffic in vehicles", the training is designed for the Escala Ejecutiva training stream - inspector category - the result of CESVIMAP's extensive experience in vehicle identification and road traffic accident reconstruction.

During this training, the future police inspectors have learnt about: materials used in automobile manufacture and possible parts modifications; identification of original and repainted paintwork; communication protocols present in the vehicles and their defect codes. Moreover, given that the centre has been conducting research since 1989 into the reconstruction of traffic accidents, fires in vehicles and their possible causes - and whether intentional or not - types of fraud, vehicle opening without forced entry, with or without damage, identification of passenger cars, motorcycles and industrial vehicles - current legislation, ways to check authenticity, etc. Damage to vehicles, and its correspondence with the manner in which the accident damage occurred, complement the theoretical and practical knowledge taught.



I CESVIMAP and APCAS First Damage Valuation Competition, held at Motortec

CESVIMAP, APCAS and Motortec held the First Vehicle Damage Valuation Competition at the international after-sales fair in Spain; this is an activity exclusive to appraisal. This competition, held in Madrid in March, brought together valuation entities Audatex, DAT Ibérica and GT Motive to sponsor this activity.

From 400 visitors, more than 60 people from repair shops, appraisal bureaux or visitors to the fair were keen to put a value on the financial cost of a real piece of damage shown on a Citroën C2, provided by CESVIMAP, MAPFRE's Centre for Experimentation and Traffic Safety. Competitors chose valuation software and carried out their appraisal. There were three winners, the people who came closest to the cost in terms of bodywork, paintwork and the total cost. Each winner received a tablet contributed by Audatex, DAT Ibérica and GT Motive, respectively.

An APCAS-designated appraiser had conducted a prior valuation. [Motortec AM](#), the international after-sales fair in Spain, had other events featuring **CESVIMAP** this year.

Presentations regarding our research

CESVIMAP gave a number of presentations at this biennial after-sales fair: ADAS: components and their influence on the reduction of accidents. Truck bodywork: elements, manufacture, joining and assembly methods, etc. Repairability of carbon fibre: characteristics of this new material and its impact on after-sales, replacement, repair and painting. And new vehicle finishes (three-coat, matte, combined colours...) and their influence on repainting were some of the subjects dealt with.



100 issues of *Revista CESVIMAP*

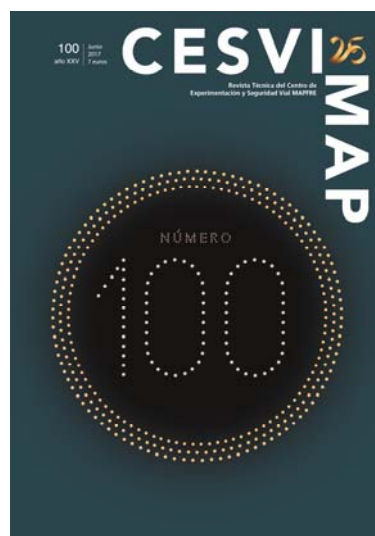
The magazine *Revista CESVIMAP* reaches its 100th issue. Thus it establishes itself as the reference in after-sales, bringing together the analysis and research conducted at the MAPFRE Centre for Experimentation and Road Safety.

This quarterly publication first appeared in 1992, with the need to have presence in the sector above and beyond the products and services offered by CESVIMAP. 100 issues and 25 years of history make up its wide-reaching informational vocation: 25,000 copies and the know-how from the centre regarding Bodywork, Paintwork, Vehicles, tool and equipment testing, waste management, to name but a few features, all free.

“With the creation and distribution of this first issue, CESVIMAP is starting a new journey: to make the culture of the automobile known among people, companies and institutions directly related to the automotive sector and in particular to everything related to the repair of vehicles damaged as a consequence of traffic accidents” commented the then president of MAPFRE Mutualidad de Seguros, Julio Castelo, in the first editorial.

“The essence of the work and the value that CESVIMAP represents for the industries related to the automotive world, for insurance companies, and for society as a whole, continues to be the same. The Centre is no longer exclusively national, but global instead, with six authorised centres enabling provision of their services in 42 countries across the five continents. It has broadened its scope of action in order to conduct research on all types of vehicles. CESVIMAP has been able to adjust to the whole technological revolution and it is still at the forefront as a reference centre to analyse the realities in the process of development, such as the intelligent car in the connected world”: these are the words of Antonio Huertas, president of MAPFRE, in the 100th editorial.

Designed for appraisers, professionals in the repair shop, after-sales, and vehicle or component manufacturers. Over these last two and half decades, it has witnessed the evolution of after-sales in terms of materials, joining techniques, paintwork effects, etc. It has adjusted to the times with new aesthetics, internet and social networks. And, to commemorate its 100th issue, CESVIMAP has launched its app called *Realidad Aumentada*, Augmented Reality, to go beyond paper and the web: 3D models, time-lapse videos, 360° videos ... they all relate directly to Virtual and Augmented Reality. The go-to technical articles in the sector. Repair shop trials to test products, with specialist professionals. A multimedia team, journalists, unique facilities, a newsletter which brings together all the latest developments... Over the last 25 years, *Revista CESVIMAP* has become a reference publication which explains the evolution between the repair of cars and the current concept of mobility and driving aid.



ARTICLES FROM CIRI (CHINA)

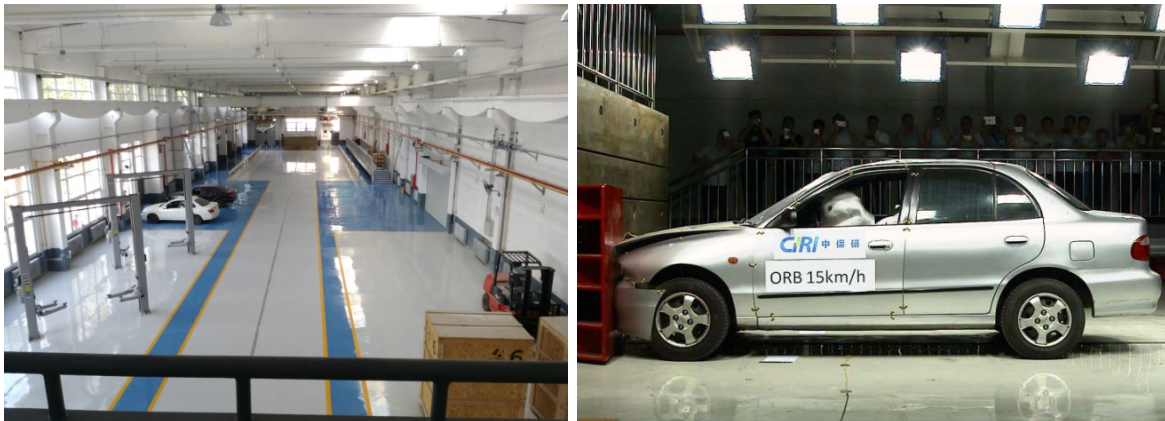
Completion of CIRI's Crash Test Center

CIRI's crash test center covers an area of about 1500 sq. meter, whose track length is 65 meters. The propulsion system is able to accelerate a 3.5 ton vehicle to the maximum speed of 50 km/h. The lighting system is able to provide 100000 Lux of illumination for high speed cameras which record at 1000 FPS. A 32-channel data acquisition system is used for collecting real-time data of vehicle. In addition, a 3D measuring equipment is used for deformation measurement. It is also equipped with RCAR barrier and mobile barrier systems used for both structural and bumper tests, as well as HVAC, four-wheel alignment, necessary machinery, forklift and other auxiliary equipment.

Currently, the test center is capable of fulfilling the RCAR structural and bumper tests at 15km/h and 10km/h respectively.

The test center is an important base for CIRI's damageability and reparability research. It is also the first ever such a test center in China's insurance industry. This is also an initiation of the vehicle risk classification research of the China's insurance industry. In 2017, CIRI plans to conduct low speed tests and evaluation choosing 10 models of vehicles. And the results will be used as part of the China Insurance Auto Safety Index.

The completion of CIRI's crash test center marked the beginning of the Chinese insurance industry direct involvement in the related automobile technology research. This indicates the Chinese insurance industry starting to build research ability to solve the key issues such as vehicle risk classification, vehicle safety research, etc., and also symbolizes the development of China's auto insurance industry entering to a new level.



Left: Overlook of the crash test lab




Right: Trial run of RCAR 15km/h front Structural test


CIRI's Painting Time Project

CIRI's research task force chose the typical vehicle models to implement the painting time calculation project in order to set up a database of painting repair items, painting methods standards, database of painting time quota and etc. Also, investigate the painting time relativity of the typical vehicle models to a general vehicle model. This will eventually generate a reference for claims and repairs.

After the first phase of in-house calculation method verification and validation and second phase of on-site real life calculation of the painting time, the results which include painting time data from 50 car models and more than 1000 pieces of parts is expected to be published in October.

The common criteria for the painting job of insurance and repair industry in China.

Painting Items	Definition	Exhibition
New Parts Painting	Painting replaced parts	
Scratches Painting	Painting to the damaged parts which does not demand of panel beating	
Small Damage Painting	Damaged area is less than 1 dm ² Putty area is less than 6dm ²	
Medium Damage Painting	Damaged area is between 1 to 12 dm ² Putty area is less than 12dm ²	

<p>Large Damage Painting</p>	<p>Damaged area is larger than 12 dm² Putty area is larger than 12dm²</p>	
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ARTICLE FROM CZ (SPAIN)

Centro Zaragoza participates in the INTERPOL's Global Conference on vehicle crime

Last April, INTERPOL held its Global Conference on vehicle crime in Kuala Lumpur (Malaysia), with Centro Zaragoza invited to speak and contribute its experience in this area.

Vehicle traffic is a highly organized criminal activity that affects the entire world and requires global solutions. The purpose of this conference is to take full advantage of INTERPOL's global policing capabilities and its collaborators, to confront one of the most critical challenges of our time.

According to INTERPOL, approximately 100 people attended the Conference, many of whom were police authorities from different countries around the world, as well as representatives of public and private companies related to this area. The police authorities from the area of Asia showed great interest, as this is a potential emerging destination for vehicles stolen in Europe.

At the end of the conference, a round-table discussion was held, with Centro Zaragoza participating to discuss collaboration with other countries in the area of illegal vehicle trafficking, helping to locate and recover vehicles stolen from entities that belong to CZ's "Stolen Vehicles" Committee.



Technical conference on ADAS

Last May, we held a technical conference on ADAS (Advanced Driver Assistance Systems) at our installations, which was attended by the members of the CENTRO ZARAGOZA's Technical Committee, as well as technical staff and executives from HELLA-GUTMANN, a company that specializes in the development of workshop equipment and a pioneer in the development of the equipment required to calibrate ADAS devices. The conference was also attended by the staff from the Center's recently-created "Observatory for monitoring of automobile technology evolution".

The conference was divided into two parts. The first part, which covered theoretical content, analyzed the different technological advances experienced by automobiles leading up to the incorporation of ADAS systems, the phases planned for its implementation until the arrival of self-driving vehicles, expected growth for the coming years, and the types and operation of the different elements that make up these devices.

The second part covered practical aspects, explaining how the CSC-Tool works through a variety of practical exercises on vehicles. This tool was specifically designed to allow workshop professionals to calibrate the cameras, sensors, and radars installed on vehicles to allow ADAS systems to fulfill their purpose.

The conference was very interesting for all those in attendance, because it provided an opportunity to exchange experiences on a subject that is very pertinent at the present time, and analyze it from different points of view, such as the perspective of automakers, insurers, and repairers. It also covered the work method to be followed in static calibration of cameras as well as radars, verifying both the proposed process as well as the time needed to carry it out.

ARTICLES FROM IAG RESEARCH CENTRE (AUSTRALIA)

1) Non reusable glass adds to repair costs

Ford fits one-use throw-away non-reusable glass to Mustang and Mondeo. This requires windscreens, quarter glasses and rear windows to be junked in the event of body or paint repairs. Ford's recommended repair method states: ***“Fixed glass must be discarded once removed. A new fixed glass is required.”***



The windscreen has bonded seals which are damaged when the windscreen is removed



Replacement seals are not sold separately.



There are also locating pins which are sheared off when removing side glass.

This is likely to have a disastrous impact on Mustang repair costs because the glass is so expensive:

Mustang	Part No	Price
F/Screen	GR326303100A	\$ 1,235.77
R/Screen	FR326342006A	\$ 1,171.57
RearQuarter Glass	FR326329710A	\$ 958.17
	FR326329711A	\$ 968.17

Ford's prices for the same glass are much cheaper in the USA:

		USA
F/Screen	GR326303100A	\$ 311.59
R/Screen	FR326342006A	\$ 385.51
RearQuarter Glass	FR326329710A	\$ 305.80
	FR326329711A	\$ 308.86

It is normal for body shops to remove fixed glass when conducting spot repairs and refinishing, even when no parts need to be replaced.

One-use throw-away non-reusable glass will add thousands of dollars to the cost of non-structural panel damage and paint jobs on Mustang and Mondeo, although Mondeo glass prices in Australia are considerably cheaper than Mustang:

MONDEO		
Front Screen H+W	DS73F0310CLK	\$ 611.55
Rear Screen Hatch	DS73A42004BK	\$ 373.83
Rear Screen Wagon	DS73N42004BK	\$ 205.30
RearQuarter Glass Wagon	DS73N29700DG	\$ 237.83
	DS73N29701DH	\$ 243.00
RearQuarter Glass Hatch	DS73A29700DF	\$ 238.69
	DS73A29701DE	\$ 238.69

2) Luxury brands charge luxury prices for radar units

Many new cars, utes and 4x4s now feature Active Cruise Control and/or Forward Collision Warning and/or Autonomous Emergency Braking.

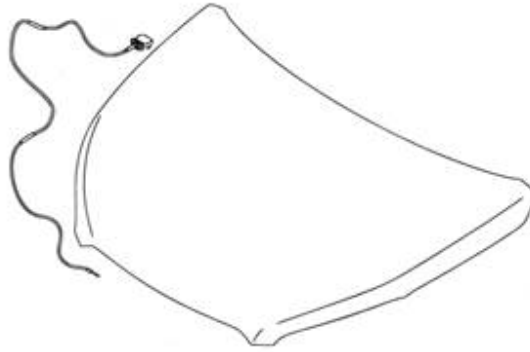
Behind the front bumper plastic fascia of each vehicle, you'll find a rectangular black radar transmitter/receiver (see picture below). Note how vulnerable this one is to frontal impact (current model Ford Ranger). It's mounted **ahead** of the front impact protection beam, meaning that collision damage is highly likely. It doesn't have replaceable mounting brackets, so the whole assembly requires renewal if damaged at a price of \$1,800 + GST.

The IAG parts database currently contains 191 vehicles featuring radar units, comprising 88 different part numbers. Prices range from less than \$1,000 (Volkswagen, Skoda and Toyota) to more than \$8,000 (Lexus and Mercedes-Benz). The technology is all fairly similar, so it may be reasonable to assume that there is some overcharging going on.



3) Suzuki prices by spin of the roulette wheel

IAG Research Centre recently noticed that Suzuki bonnet pull cables vary in price from as low as \$8.55 for Suzuki Baleno to as high as \$452.42 for Suzuki S-Cross. These parts comprise a length of wire inside a plastic tube: basic technology that hasn't changed for half a century.



The IAG Research Centre asked Suzuki Australia to review their figures, which resulted in S-Cross part number 82160-61M01 being reduced in price by a whopping \$424.92 to just \$27.50. There was no evidence of a computing mistake, so it just goes to show how malleable prices are and how arbitrary the process of setting prices can be.

ARTICLES FROM IIHS (USA)

Lane maintenance systems still a turnoff for many drivers

Among vehicles with crash avoidance features, lane maintenance systems are turned off nearly half the time, a new IIHS survey shows. The study confirms previous findings that lane departure warning and lane-keeping support systems are one of the less popular types of crash avoidance technology. However, it also suggests ways of designing systems to make them more likely to be used.

Many drivers shut off lane maintenance systems because they find them annoying. IIHS first looked at the operating status of crash avoidance features in an earlier study of Honda vehicles brought into dealerships for service. The researchers found that only one-third of vehicles had lane departure warning turned on, while all but one vehicle had forward collision warning turned on.

The new study also observed vehicles that were brought in for service but this time included models from nine manufacturers. Of the 983 vehicles observed, 51 percent had their lane maintenance systems turned on. Among other types of crash avoidance systems, use rates were 90 percent or higher.

Results varied for lane maintenance features, depending on the characteristics of the system. Warning systems were more likely to be turned on if they had tactile warnings (54 percent) instead of auditory warnings (46 percent). Lane departure prevention systems, which guide the vehicle back into the lane when it begins to drift, also were more likely to be turned on than lane departure warning systems.

Most of the lane maintenance systems studied could be deactivated with the push of a button. The Volvo XC90's active lane-keeping system had a much higher than average observed use rate of 86 percent. To turn the system off, drivers must navigate to a menu and go through several steps.

For more information, go to www.iihs.org/iihs/sr/statusreport/article/52/4/3



Photo
Driver pushes a button to activate a lane maintenance system

Most midsize SUV headlights are marginal or poor

New midsize SUV ratings from IIHS show that headlights are improving when it comes to visibility, but many still need to do a better job of lighting the road ahead while limiting bothersome glare.

The 2017 Hyundai Santa Fe and the 2017 Volvo XC60 are the only models available with good-rated headlights among the 19 midsize SUVs and 18 midsize luxury SUVs evaluated in this new round of tests. Twelve SUVs are available with headlights rated acceptable, while 23 aren't available with anything other than marginal- or poor-rated headlights. This is the fourth group of vehicles IIHS has evaluated since launching headlight ratings in 2016.

Since few consumers test drive a vehicle at night before buying, IIHS headlight ratings help shed light on this basic, yet essential crash avoidance technology. Nighttime visibility is critical to highway safety because about half of traffic deaths occur either in the dark or at dawn or dusk. Differences in bulb type, headlight technology and even something as basic as how the lights are aimed all affect the amount of useful light supplied. Properly aimed low beams light up the road ahead without temporarily blinding drivers of oncoming vehicles.

In the Institute's evaluations, engineers measure how far light is projected from a vehicle's low beams and high beams as the vehicle travels straight and on curves. Glare for oncoming vehicles also is measured from low beams in each scenario to make sure it isn't excessive.

Headlights can vary by trim line, so vehicles often come with multiple headlight variants. The 37 SUVs that IIHS evaluated have 79 possible headlight combinations. More than half of the variants evaluated have too much glare. In 17 of those cases, the headlights would be rated poor based on glare alone. Complaints about glare from oncoming headlights are common, research by the National Highway Traffic Safety Administration indicates.

For more information, go to www.iihs.org/iihs/news/desktopnews/more-than-half-of-midsize-suv-headlights-tested-rate-marginal-or-poor

New award spotlights underride guards

Five North American semitrailer manufacturers earn the new IIHS **TOUGHGUARD** award recognizing rear underride guards that are designed to prevent a range of deadly underride crashes. Semitrailers from Great Dane LLC, Manac Inc., Stoughton Trailers LLC, Vanguard National Trailer Corp. and Wabash National Corp. earn the accolade.

All underride guards must meet U.S. safety standards, but IIHS research and crash tests have shown that many underride guards can buckle or break off in a crash. When guards fail, the resulting underride crashes often result in death or serious injury to people in passenger vehicles.

The IIHS **TOUGHGUARD** winners have rear guards that prevent underride of a midsize car in three test modes — full-width, 50 percent overlap and 30 percent overlap. In each configuration, a midsize car travels at 35 mph toward a parked semitrailer. In the full-width test, which is the easiest to pass, the car strikes the center of guard head on. In the 50 percent overlap, half of the car's front end strikes the guard. In the toughest test, 30 percent of the front of the car strikes the trailer at its outermost corner. Underride guards are weakest at the outer edges of a trailer.

Announced in March, the **TOUGHGUARD** award is the culmination of six years of IIHS research and testing. The Institute began its underride crash test program in 2011 and has since evaluated multiple trailers from eight of the largest trailer manufacturers in North America.

In May, IIHS shared results of its first evaluation of a side underride guard design. IIHS ran two 35-mph crash tests: one with an AngelWing side underride protection device from Airflow Deflector Inc. and a second test with a fiberglass side skirt intended to improve aerodynamics, not to prevent underride. The results were dramatically different.

In both tests, a midsize car struck the center of a 53-foot-long dry van trailer. In the AngelWing test, the underride guard bent but didn't allow the car to go underneath the trailer, so the car's airbags and safety belt could properly restrain the test dummy in the driver seat. In the second test with no underride guard for protection, the car ran into the trailer and kept going. The impact sheared off part of the roof, and the sedan became wedged beneath the trailer. In a real-world crash like this, any occupants in the car would likely sustain fatal injuries.

U.S. law requires rear underride guards for large trucks but not side underride guards.

For more information, go to www.iihs.org/iihs/news/desktopnews/iihs-recognizes-semitrailers-with-good-underride-guards



Photos:
Great Dane semitrailer rear underride guard test
AngelWing side guard test

ARTICLES FROM JKC (JAPAN)

Seeking better target-placing methods

ADAS (Advanced Driver Assistance System) is becoming standard equipment for brand new vehicles and is regarded as a major contributor to crash avoidance. Meanwhile, the wide variation in ADAS as well as that in calibration methods is putting burden on the repairers. Although auto-calibration would be one way to improve the situation, establishing efficient methods for manual calibration is nonetheless important, as the unavailability of suitable traffic environment leads repairers to manual calibration. In this article, we focused on procedures where repairers manually determine the points which indicate the exact place where sensor-targets should be set. (These points are called “target-placing points” in this article.)

1. Two approaches in determining target-placing points

Currently there are two general approaches to determine the target-placing points. One is “Axis Method” and another is “Lateral Method”. Step by step descriptions of these two methods are explained below (see also [figure 1]):

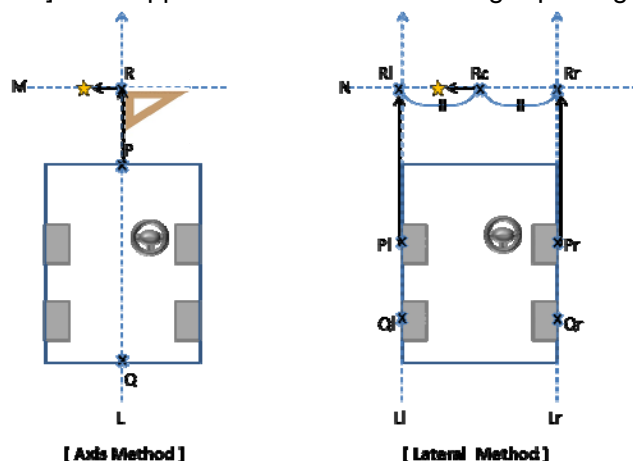
[Axis Method]

- #1 By fixing the string of a plumb bob at the center indicator (i.e. front emblems), the first point (=Point P) is marked on the floor. The second one (=Point Q) is marked similarly via rear emblems or something else which indicate the rear center. “Axis” line (=L) is determined by points P and Q.
- #2 Along line L, point R is marked at prescribed distance from point P.
- #3 By using a triangle, line M, which crosses line L at right angle, is drawn.
- #4 Along line M, the target-placing point is determined at prescribed distance from point R.

[Lateral Method]

- #1 By fixing the string of a plumb bob at the center of left front tire, Point P_l is marked below the center of left front tire. Point Q_l is marked similarly below the center of left rear tire. The left side line (=L_l) is determined by points P_l and Q_l.
- #2 Along line L_l, point R_l is marked at prescribed distance from point P_l.
- #3 Point R_r is marked on line L_r by applying above #1 and #2 steps to the right side of the vehicle.
- #4 Line N is determined by points R_l and R_r.
- #5 Point R_c is marked at precisely a half between R_l and R_r.
- #6 Along line N, the target-placing point is determined at prescribed distance from point R_c.

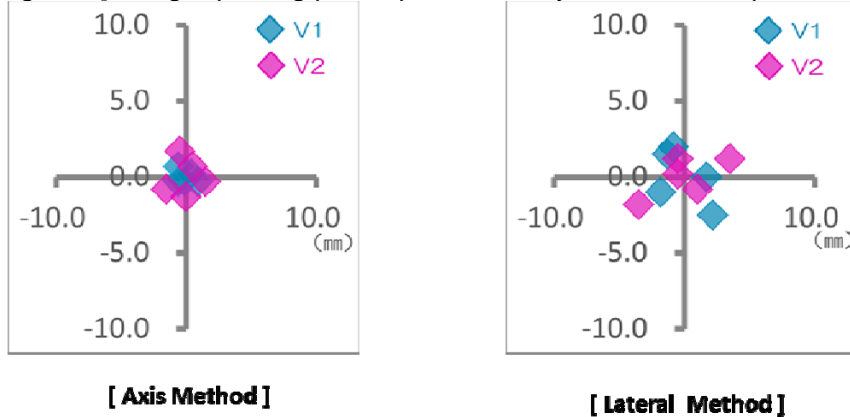
[Figure 1] Two approaches to determine target-placing points



2. Evaluation of each method (the deviation of target-placing points)

By applying each method five times to one test vehicle (=V1), target-placing points are plotted out on a grid paper (unit: 1mili-meter) [figure 2]. Then the standard deviation of each method was calculated. Exactly the same process was carried out to another test vehicle (=V2) as well. The results indicated that Axis Method was able to plot out the target-placing points less dispersing way than the Lateral Method [Table 1].

[Figure 2] Target-placing points plotted out by each method per vehicle



[Table 1] Standard deviation of target-placing points (n=5)

Tested Vehicle	Axis Method	Lateral Method
V1	0.7 mm	2.6 mm
V2	1.5 mm	2.3 mm

3. Evaluation of each method (required time to determine target-placing points)

In order to compare both methods in terms of time efficiency, we carried out both methods to the other test vehicle (=V3), three times per method. We measured actual work times and calculated the average work time of each method. The results were 401 seconds for Axis Method and 895 seconds for Lateral Method.

4. Our preliminary view and the planned further research

The number of trials in this study was relatively small, yet it can be assumed that Axis Method has more advantage than Lateral Method in both terms of reproducibility and efficiency. To further confirm this assumption, JKC has decided to conduct follow-up study. We are hoping to obtain the results in the very near future.

Promoting section repair of headlamp units

1. Background

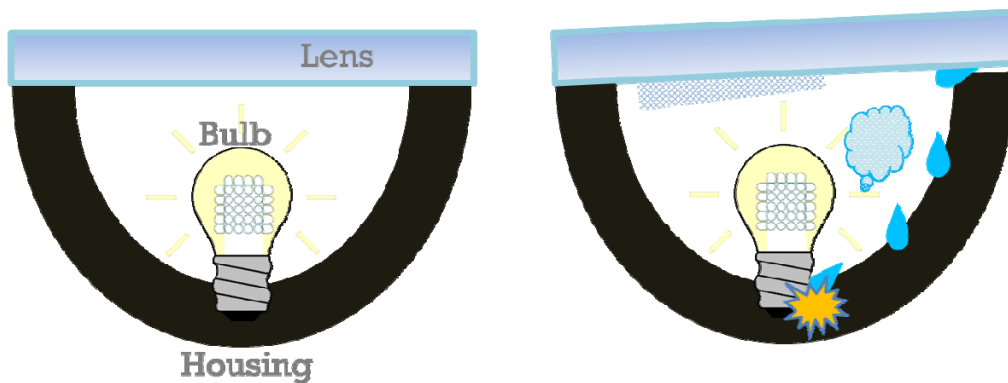
An insurance statistic in Japan estimated that seven or eight out of ten broken headlamp units suffered minor damages confined to exterior parts. Most of these headlamps are actually replaced with new assemblies regardless of the extent of damage while the prices of headlamp parts have been rising recently along with the application of new technologies to the headlamps, such as LED and Adaptive Front-lighting Systems. This situation could turn out to be problematic for both consumers and insurers, and JKC is now trying to find ways to mitigate the situation.

2. Study to overcome the reluctance of repairers

In general, a headlamp unit consists of three basic pieces [Figure 1]. The first one is a light bulb combined with control unit. The second is a housing where the light bulb is set. The third is a lens, with which the housing is capped.

In principle, repairers could fix broken headlamp units by changing each of the damaged pieces respectively. But this is very unlikely in Japan because repairers are afraid that water or something else seeps into inner space through the gap between lens and housing, and this occurrence ends up causing damage to the headlamp unit.

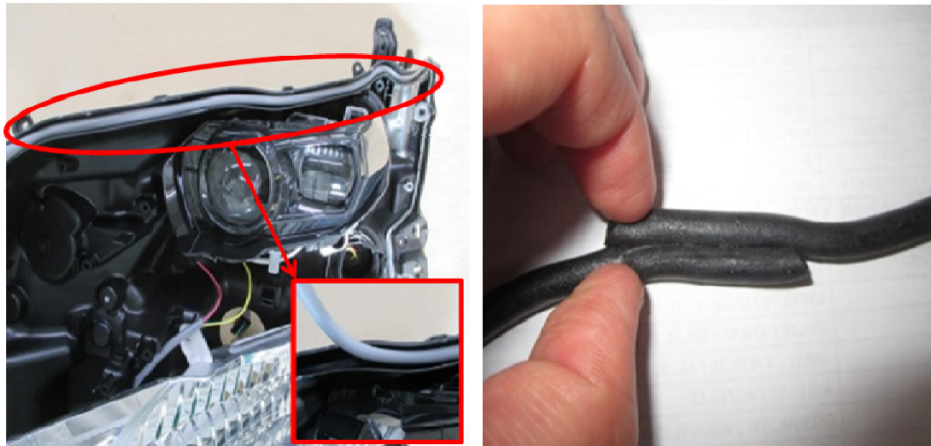
[Figure 1] Basic structure of headlamp



Most of Japanese OEMs seem to be in the same opinion except for TOYOTA, which is actually supplying housings and lens in a separate form, even though for just five vehicle models as of today. They launched a new material for gasket to keep the headlamp unit perfectly sealed. It appears like a thick shoelace and is sticky but easy to remove [figure 2]. This nature allows aftermarket repairers to work efficiently and assure the quality of repair.

JKC installed this gasket to the headlamp unit of JKC's non-Toyota vehicle a year ago, and it turns out that nothing abnormal has happened so far.

[Figure 2] TOYOTA's new gasket for sealing headlamp units



3. Next steps

JKC is planning to take following actions as its next steps.

- * To continue our current research and expand the test conditions as well as test vehicles
- * To urge Japanese OEMs to supply headlamp parts in separate form
- * To study the situations regarding headlamp repairs conducted in countries other than Japan

ARTICLE FROM KART (KOREA)

New Vehicle Crash Test Facility is Under Construction

KART constructed vehicle crash test facility in 2004. It is ECV(Electronically Controlled Vehicle) crash system which uses vehicles' own engine power as a propulsion.

Nowadays, KART is more focusing on running Insurance Group Rating System and evaluating damageability and repairability to contribute to rationalize motor insurance premium. To get this goal, KART has decided to modify the existing facility. The propulsion system is switched from ECV to electric motor and a new building is constructed to improve security. The test track was opened to air, and special care should be given when new vehicle models were tested for group rating due to the models are not open to the public.

The new facility has the capacity of 100kph test speed with 3ton of vehicle It is expected that the facility goes into normal operation by early July.



<Photo 1> New Crash Test Facility

The old crash test facility, ECV system, will be used even after introducing new system. The rigid barrier used for crash test with ECV system was built and can be seen in <Photo 1> along with the yellow dashed line

ARTICLE FROM KTI (GERMANY)

Evaluation of Park Distance Warning systems (Part 1/2)

According to statistics provided by RCAR¹ parking and maneuvering accidents became increasingly relevant in third party damage liability and first party or motor own damage claims. Up to 40 % of all claims are parking and maneuvering accidents who caused up to 30 % of all claim costs.

Within a research project, KTI has conducted studies to determine the performance of ultrasonic-based Park Distance Warning (PDW) systems.

Furthermore, KTI has already tested a VW Tiguan (AD1) and a BMW 5 series (G30) according to the RCAR R-AEB test procedure. However, the results of these tests are not part of this article.

Static test setup

The static test setup basically bases-on ISO 17386² and enables to determine the detection range and detection capability of a vehicle's PDW system. This means, the target and the vehicle are not moved during the determination.

Assuming a symmetrical behavior of the PDW system, only one half of the vehicle rear and / or front were tested in a rectangular test field (260 cm length x 160 cm width). Three different bollard targets were positioned consecutively within the test field to estimate the reaction of the PDW system towards the target in three-dimensions. Optical and / or acoustic feedback by the test vehicle have been applied as criteria for bollard target recognition. See Figure 1 for the illustration of the test targets, setup and exemplary result.

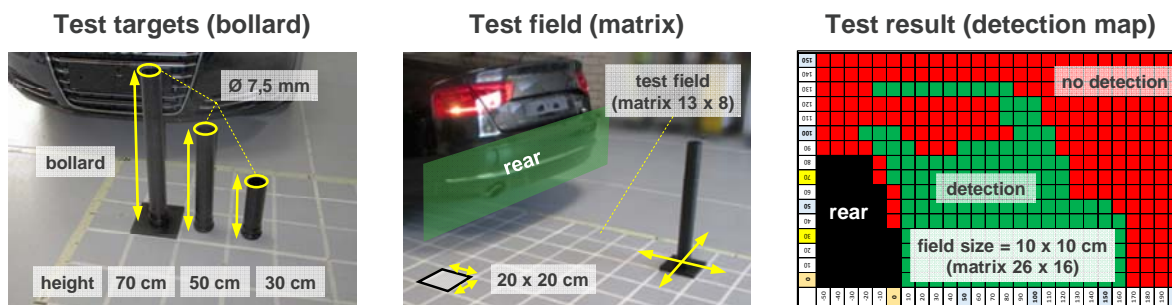


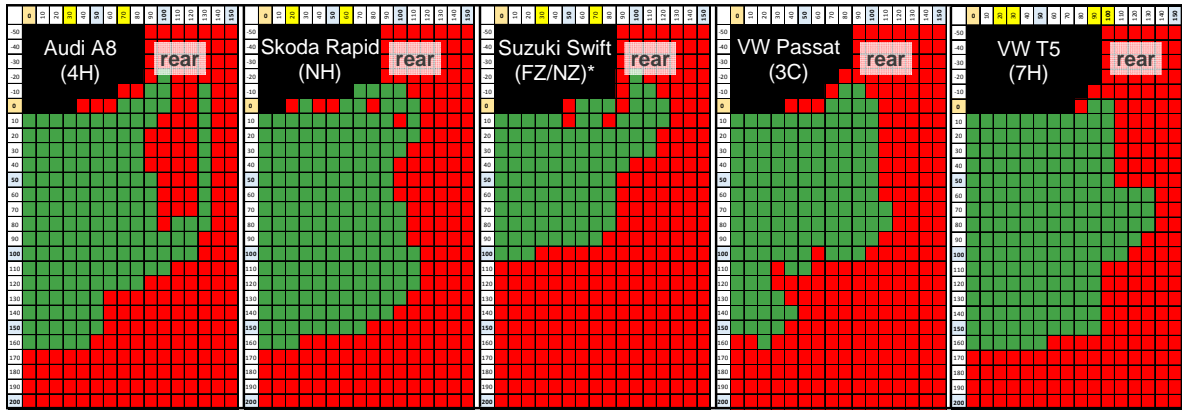
Figure 1: Static test setup

In this study five different vehicles have been tested and parts of their results are summarized in Figure 2 in form of specific detection maps of the test field in top view. A detection map provides a visual result of the detected fields by the PDW system around the vehicle.

¹ "Position paper regarding parking and maneuvering accidents"; version 1.0; June 2015; <http://rcar.org/>

² ISO 17386: "Transport information and control systems – Maneuvering Aids for Low Speed Operation (MALSO) – Performance requirements and test procedures"; First edition 2004-07-01

(a) Detection maps of all tested vehicles in the rear (bollard height = 70 cm)



*Suzuki Swift equipped with aftermarket PDW system

(b) Detection maps of Audi A8 (4H) in the front and rear with all targets

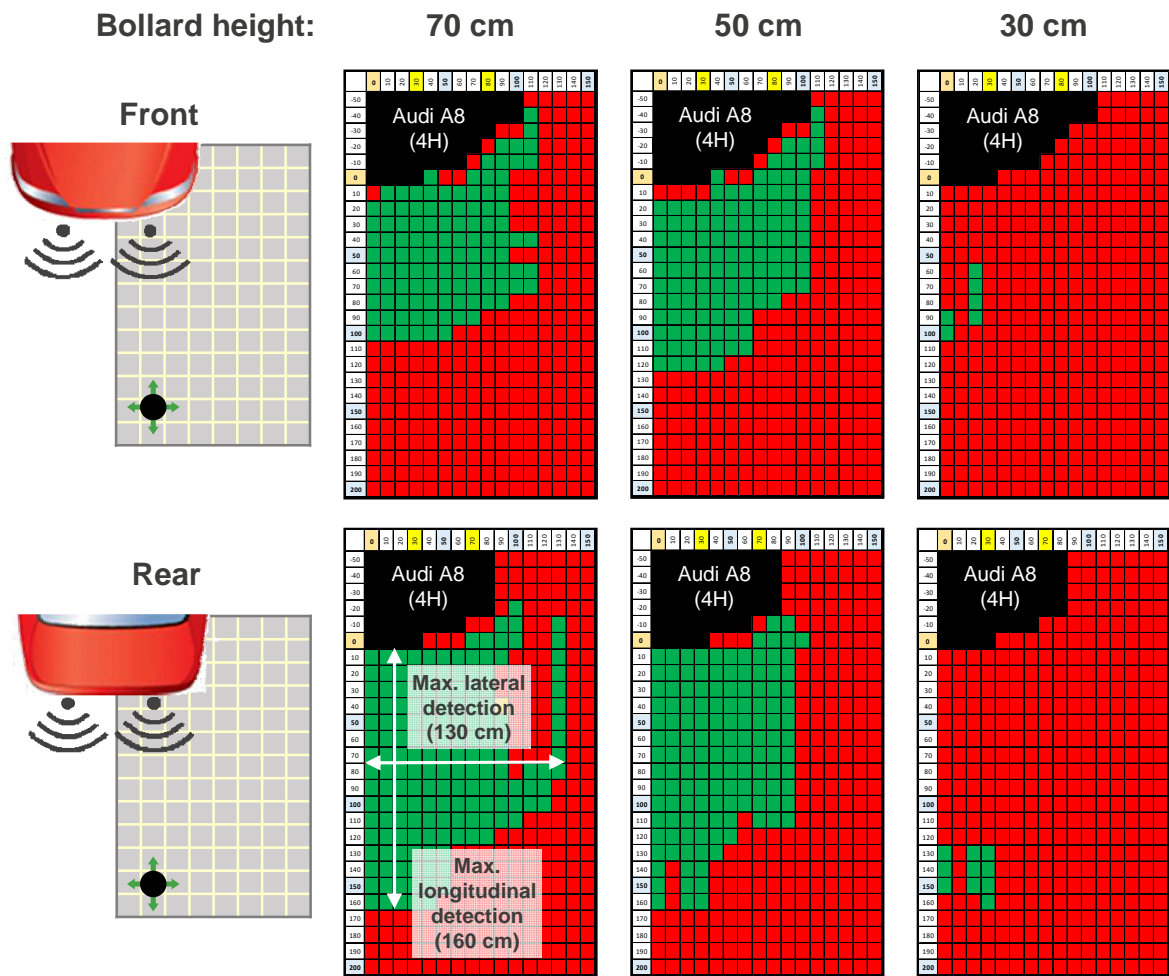


Figure 2: Test results for static test setup

Summarizing the performance of ultrasonic-based PDW systems in a static test set up shows five major findings with regard to target detection ratio as a potential quality measure³:

- Performance of PDW systems varies strongly between all vehicles.
- Bollard target recognition is positive correlated to the targets height, 30 cm targets are only detected sporadically.
- Difference in performance between front and rear is negligible regarding to maximum lateral detection.
- Rearward orientated sensors show a higher performance in detecting targets in a longitudinal position to the vehicle than forward orientated ones.
- Some vehicles show “blind areas” in their detection maps (e.g. detection map of Audi A8 in the rear at a bollard height of 70 cm).

Conclusion and outlook

As parking assistance systems have been developed rapidly during the last decades and have become sophisticated, elaborated systems, expectations considering their functionality and reliability have increased from different points of view.

Nevertheless, system performances in terms of obstacle (target) recognition show a significant spread between the tested vehicles. In the meantime, new systems and functionalities – especially Reverse Autonomous Emergency Braking (R-AEB) systems – have been developed and undergo an increasing market introduction and fleet penetration.

Within a first step, RCAR has developed a structured test procedure to address the substantial share of parking and maneuvering collisions – based on statistical analysis and evaluation of RCAR members and their corresponding markets. Actual findings support the relevance of collisions occurring in reversing situations, but results from experiments and real world cases underline the necessary consideration of further collision constellations (e.g. forwarding parking collisions and / or vehicles side sections) as well. Further results will be published as part 2 within the next RCAR newsletter.

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³ Within this study, only qualitative measures and statements were made as there are no quantitative measures (e.g. benchmarks). In addition, the test field size varies from one vehicle to the other as the vehicles have different sizes and shapes.

ARTICLE FROM SAMSUNG (KOREA)

Samsung Delegates Visit European Institutes for Speed Limit 5030 in Urban Roads



The Samsung Traffic Safety Research Institute (STMRI) has continuously pursued the long-term project named 'Speed Limit 5030' for years to reduce car accidents as well as to protect pedestrians in urban roads. As part of an effort to enrich the strategy of speed limit in urban area, Dr. In-seok Kim and Dr. Sang-ock Kim jointly visited BASt in Germany (left above), Transport Infrastructure in Ireland (right above), and Institute for Transport Sciences in Hungary (others) in a row with 10 delegates from the National Police Agency (NPA), the Ministry of Land, Transport, and Maritime Affairs (MLTM), Transportation Safety Authority (TSA), the Korea Transport Institute (KOTI), and so on.

The purpose of this visit is to examine the best practices about speed limit strategy of urban roads in some of European countries in order to draw the implication of how to adopt and settle down the policy in South Korea by cooperation between the government, institutes, and academia. In this trip, three agenda were discussed as following: Collaboration method and practice of related organizations based on speed limit setting, establishment of lower speed limit in urban roads and formation of consensus, and the examples of institutional policy differentiation and effectiveness.

Previously in 2014, the STMRI examined the number of accidents, the number of casualties, the speed of vehicle movement, and the degree of change during the six months before and after the project of the downward speed limit across the nation, which was administered by the NPA. After that, the STMRI proposed that lowering the speed limit is effective in decreasing the number of accidents, and that it is necessary to find out the speed management plan through long-term legislation along with the continuous operation of the NPA.



SAMSUNG TRAFFIC SAFETY RESEARCH INSTITUTE