

Issue 6 • December 2010

Dear Secretary, Dear Members of the National EAEC Societies, Dear Friends and Colleagues,

This is the last issue of this year.

That is a good reason for the Euopean Automotive world to look back to a successful year. It seems that the peak of the crisis overcome. The high number of automotive events in Europe reflects the positive attitude in the automobile industry, research and academia.



The season for automotive events of this year are coming to an end. I inform in the column "Post Congress Information", in this issue about the recent congresses in Europe and how to get subsequent information and proceedings. Special emphasis will be given to congresses under FISITA Patronage.

I am very proud that I became an Honorary Member of SIAR, the Romanian Society of Automotive Engineers, at the CONAT 2010 Congress in Brasov.

In the column: "Future Automotive Events" all congresses, symposia and other automotive meetings

till the middle of the year 2011 are given. Please send me information about automotive events in your country, which are not on the list. I will announce them in the next issues.

Next year we have our main congress:

EAEC 2011 Congress

14 – 16 June 2011 Valencia, SPAIN http://eaec2011.com/

Please find more information about Valencia in this issue,

The *"Historic Corner"* continues the history of electric vehicles with examples from the end of the first period of electric vehicles till to the beginning of WWI.

I wish your society, the staff and the members a Merry Christmas and a successful New Year!

Brigadier ret. Prof. Günter Hohl EAEC President



Future Main Events

Next year, one of the most important automotive meetings in Europe will be the:

EAEC 2011 Congress

The Spanish Society of Automotive Engineers (STA) will host the 13th EAEC European Automotive Congress 2011, which will take place from June 14th - June 17th 2011 in Valencia, Spain.

The theme of the Congress is:

The Automobile in the Second Decade:

Sharing all Energy Solutions

EAEC 2011 Congress will take place at the:

Universidad Politécnica de Valencia (UPV)

The campus of the Technical University is at the border of the city of Valencia, but not far from the centre. Bus transfer from and to the hotels is provided. Taxis or public transport by tram are also possible.



The UPV was founded in 1968 as a higher education centre for technological training, although some of its schools are over centuries old.

The balance between modernity and tradtion

is not only a physical and emporary feature, but refelects the philosophy that lies behind the university.

UPV has three campus sites, located in Valencia - the location of the EAEC 2011 Congress - in Alcoy and Gandia.

The branches of studies are agronomy, civil engineering, architecture, industrial engineering, information and communication technologies, biotechnology, aeronautics, business management, and administration as well as fine arts.

UPV curently has 37,000 students, 2,600 teachng staff members and 1,700 administrative personnel.





	Monday 13 th	Tuesday 14 th	Wednesday 15 th	Thursday 16 th	Friday 17 th
09:00 11:00		Opening Ceremony	Technical Sessions	Technical Sessions	Executive FISITA
11:00 13:00		Plenary Session	Technical Sessions	Closing Plenary Session	Executive FISITA
13:00 14:30		Lunch	Lunch	Buffet	Lunch
14:30 18:00		Technical Sessions	Technical Sessions	FISITA Committee EAEC Council	FISITA Council
20:00 22:00	Welcome	Social Programme	Congress Dinner	FISITA Meeting	FISITA Dinner

Congress Topics





Sightseeing in Valencia

The official name of the autonomous community, Comunitat Valenciana, has seen a variety of renditions in English, including "Valencian Community", "Land of Valencia", "Region of Valencia" or, most commonly, simply "Valencia".

The Spanish name, **"Comunidad Valenciana,**" was coofficial under the first Statute of Autonomy of 1982.

The ancient winding streets of the Barrio del Carmen contain buildings dating back to Roman and Arabic times. The **Cathedral**, built between the 13th and 15th century, is primarily of Gothic style but contains elements of Baroque and Romanesque architecture,

One builing of the city that is well woth seeing is the the Gothic **Palau de la Generalitat**, in which the regional government of the Valencian area is situated.

The **Townhall** consists of two merging structures: the former School of the Archbishop Mayoral, the *"House of Education"*, and that from the very last-century buildings,





The Townhall

In the next issues of the EAEC Newsletters more details about sightseeing in Valencia will be given.



Post Conference Information

EUROPEAN KONES2010

12 - 15 September 2010 Warszawa – Gdynia - Jurata

More details please find under:

http://www.ilot.edu.pl/index.php/konferencje/kones/ kones-2010

Proceedings are available via: e-mail: ilot@ilot.edu.pl



6 - 9 October 2010 More details please find under: http://truck2010.bntu.by/ Proceedings are available via: vgorbash@bntu.by



CVT HYBRID INTERNATIONAL CONFERENCE MECC / MAASTRICHT / THE NETHERLANDS 17TH NOVEMBER - 19TH NOVEMBER 2010

Helmond, Netherlands

Proceedings are available via: e-mail: info@cvt2010.org

8th International Conference Powertrain technologies for CO2 reduction

November 17, 2010 - November 18, 2010 Torino

Proceedings are available via: e-mail: patrizia.mantovani@ata.it

ACN-CH

11. Automotive Day 2010

Proceedings can be Die kleinen Schritte downloaded from: zum grossen Ziel www.Automotiveday.ch





Conference of Internal Combustion Engines: Performance, Fuel Economy and Emissions

29 - 30 November 2010 Proceedings are available via:

e-mail: enquiries@imeche.org



Proceedings are available via: e-mail: patrizia.mantovani@ata.it





At the CONAT 2010 Congress, over 260 scientific papers, were presented by academics, researchers, designers, specialists in construction and maintenance, and students from 22 countries. Initiated 45 years ago, the International Congress CONAT recorded during its 10 editions, notable developments, characterized by the increasing density and quality of scientific information, the number of papers, participants and academic institutions, research institutes and companies producing automobiles, equipment and components.



Prof. Anghel Chiru CONAT 2010 Congress Chairman



Prof. Eugen Negrus Executive President of SIAR

The Congress CONAT 2010 represented a scientific event of reference for researchers, designers and manufacturers of automotive equipment and components, as well as for the specialists in transport, traffic and road safety. It gathered energies, concerns and interests of all those who create innovative products and strives for performance in car and transport engineering.



Congress Centre Plenary hall

> Presentation of certificate of the honorary membership of SIAR to the EAEC President Günter Hohl



Future Automotive Events

The 81st International Geneva Motor Show

Venue: Geneva, Switzerland 3 - 13 March 2011 Organizer: OICA Website: <u>http://www.salon-auto.ch/en</u>

11th International Automobile Recycling Congress IARC 2011

Venue: Budapest, Hungary 23 - 25 March, 2011, Organizer: IARC Website: <u>http://www.recycling-technology.de</u>

32nd International Vienna Motor Symposium 2011

Venue: Vienna, Austria 5 - 6 May 2011 Organizer: OEVK Website: http://www.oevk.at

Commercial Vehicles 2011

Venue: Steyr, Austria 26 - 27 May 2011 Organizer: VDI-FVT Website: <u>http://www.vdi.eu/</u>

IAMF-International Advanced Mobility Forum

Venue: Geneva, Switzerland 8 - 9 March 2011 Organizer: iamf Website: <u>http://iamf.ch/en</u>

23rd JUMV

International Automotive Conference Venue: Belgrade, Serbia 19 – 21. April 2011 Organizer: JUMV Website: <u>http://jumv.rs/en/</u>

18th International Automotive Congress,

Future Powertrains & Smart Mobility Venue: Eindhoven, University of Technology 16 – 17 May, 2011 Organizer: Eindhoven, University of Technology Website: <u>http://www.automotivecongress.nl/</u>

International VDI Congress Transmissions in Vehicles 2011

Venue: Friedrichshafen, Germany 7 - 8 July 2011 Organizer: VDI-FVT Website: <u>http://www.getriebkongress.de/</u>



Venue: Valencia, Spain 14 - 16 June 2011 Organizer: STA and EAEC Website: <u>http://eaec2011.com/</u>



THE HISTORIC CORNER

In the years around the turn of the 19th to the 20th century there were three completely independent technologies for the propulsion of vehicles, steam engines, electric motors and combustion engines.

USA 1900



It is interesting that in this time more electric and steam cars were produced in the USA than vehicles with gasoline engines.



1,575 electric cars

1,688 steam cars

929 gasoline cars

One of the reasons for the widespread use of electric vehicles at that time was the simple design. The drive train of an electric vehicle consisted only of a generator and a controllable electric motor and no manual transmission. Due to its low noise and no exhaust gases, the electric drive was advantageous for vehicles in urban areas. The disadvantage of electric vehicles – this is also valid nowadays- is the technical process of storing electric energy through chemical reactions which needs large space, high weight and has a low energy density.

On the other hand, the limited range of electric cars side was compensated by the easy starting procedure.

After the turn of the century till the beginning of WWI the technological development and the production of electric cars stagnated. It is remarkable that the beginning of the end of electric vehicle of the first generation (the second generation we have now) was also electricity. It was the invention of the electric starter in 1912 by Charles Franklin Kettering,

The cycle and of internal-combustion engines require the pistons to be moving before the ignition phase of the cycle. This means that the engine must be set in motion by an external force before it can power itself.

Originally, a hand crank was used to start engines, but it was inconvenient, difficult, and dangerous to crank-start an engine. Even though cranks had an overrun mechanism, when the engine started, the crank could begin to spin along with the crankshaft and potentially strike the person cranking the engine. Additionally, care had to be taken to retard the spark in order to prevent backfiring; with an advanced spark setting, the engine could kick back (run in reverse), pulling the crank with it, because the overrun safety mechanism worked in one direction only. Charles Franklin Kettering was an American inventor, engineer, businessman, and the holder of 140 patents. He was a founder of Delco, and was head of research for General Motors for 27 years.

Among his most widely used automotive inventions was the electrical starting motor I



Charles Franklin Kettering (1876 – 1958)



Electric starter (1920)

Electric vehicles in postal service

The use of electric vehicles for collecting and delivering letters and parcels was in service for a long time and many years after WWII and is again in discussion nowadays. This application only makes sense when the vehicle is used for small distances and returns every day to the home garage where the batteries can be charged or changed.



German Reich 1871 - 1918



The post system in Germany and thus in Austria can be traced back to the Middle Ages. At this time till 1806 both countries belonged to the "Holy Roman Empire of German Nations"

EAE

The Metzger Post is credited to be perhaps the first international post of the Middle AgesThe guild of butchers (German: Metzger) organized courier mail services with horses; when the mail arrived they used a horn to announce it and thus created a commonly recognized emblem for postal services. The Metzger Post was established in the twelfth century and survived until 1637, when Thurn and Taxis's monopoly took over



man times in 1650, - they started in the town of Kocs giving rise to the term "coach".

One example for the use in the postal sevice was the trucks for the German Reichspost (Imperial Post Administration) as from from the 1890s.

In 1497, on behalf of Emperor Maximilian I of the Holy Roman Empire, Franz von Taxis established a postal service that replaced the ad-hoc courier for official mail. A horse relay system was created that shortened the transit time for mail and made its arrival predictable. Thereafter, the house of Thurn and Taxis using the im-

perial yellow and black livery maintained the postal privilege for many centuries.

Thurn and Taxis employed the first horse-drawn mail coaches in Europe since Ro-

The "Elektrischer Reichspost Motorwagen" (Electric Imperial Post Administration Motor Vehicle) was designed for a payload of 500 -1,000 kg.

This vehicle was equipped with two electric motors with 600 rpm and 2,5 HP. The batteries were placed under the driver's seat and had 44 cells with a capacity of 100 Ah. The speed control offered five forward speed ranges and one reverse speed range.

Elektrischer Reichspost Motorwagen"

The concept using electric vehicles for the delivery of letters and especially of parcels was used in Germany for a long time. Before World War I, the technology of electric trucks was so perfected that electric vehicles were used in high number in the post service. One of the reasons was that the price for electric energy was much lower than for gasoline. The peak of electric vehicles for the German post was in 1938, when 2,648 of these vehicles built by many manufacturers were in service.

One of the producers was the company. "Hansa Lloyd Elektrowagen" (right). The trucks were built in 1928 in Bremen and were used for parcel delivery.

These vehicles with rear chain drive were almost indestructible and even many years after the Second World War in both German states in use.

Another legendary electric vehicle was the :

"Bergmann Parcel Delivery Van" with electric motor, built between 1922 and 1927.







Austrian Hungarian Empire

After the successful introduction of electric vehicles in the post service in Germany, the Austrian - Hungarian post head office followed the German example in 1912.

Austria has in the development of electric vehicles a long tradition and especially the early days were characterized by innovation. Some milestones of this development were presented in the EAEC Newsletter Volume 5 December 2010.



Electric van in postal service (1913)

The **"Allgemeine Autobobilzeitung (Vienna)"** wrote (1913) (here in extracts):

"....Today is a milestone in the transport of goods in Vienna. Though electric luxurious electric vehicles for private use and for the fire brigade could be seen in a small number on our streets, today a remarkable number of 30 electric post delivery vans come into service. It is clear that the transport of goods will be done in the future by automobiles. One question will remain, will the electric propulsion system be better than the cobustion engine....."



200 electric vans for the transport of parcels and letters were in the postal sevice till 1982 (right). Now there are again efforts by the Austrian postal administration. to introduce electric scooters for the mail and parcel delivery (left),





The Royal Mail traces its history back to 1516, when **Hen-ry VIII** established a *"Master of the Posts"*, a post which eventually evolved into the office of the Postmaster General. The Royal Mail service was first made available to the public by **Charles I** on 31 July 1635, with postage being paid by the recipient. and the General Post Office (GPO) was officially established by Charles II in 1660.

Between 1719 and 1763, Ralph Allen, Postmaster at Bath, signed a series of contracts with the post office to develop and expand Britain's postal network. He organised mail coaches which were provided by both Wilson & Company of London and Williams & Company of Bath. The early Royal Mail Coaches were similar to ordinary family coaches but with Post Office livery.



Henry VIII (1491 - 1547)

Charles I (1600 - 1649)



Also in other countries electric vehicles were used for the delivery of mails and parcels. ,Going green' is not a new concept for the postal service: The Post Office has experimented with electric vehicles for over a hundred years.

The Royal Mail in Great Britain used electric trucks and tractors particularly for transporting mails to and from railway stations. In August 1920, the purchase of 13 electric battery trucks was authorized for conveying letter and parcel mails between the Birmingham Sorting Office and the New Street Railway Station.

When the adoption of motorized services was first suggested, electrically powered vans were first thought to be most suitable. Despite some successful trials, the Post Office refused to commit themselves to the new technology.



A Daimler electric mail van, 1899



The other successful use of electric vehicles was Pedestrian-controlled Electric Delivery Trucks (PEDT). Introduced in 1954, they reduced the strain on the delivery staff. The early PEDTs had a box body and were first used for parcel delivery work, then later on town letter deliveries. In 1978, there were 470 electric trucks on postal duties. The use of a smaller variant is currently being expanded across the country.



In addition to electric delivery vans, electric trucks and tractors were used particularly for transporting mails to and from railway stations. In August 1920 the purchase of 13 electric battery trucks was authorized for conveying letter and parcel mails between the Birmingham Sorting Office and the New Street Railway Station.

Use of these trucks increased in the 1930s. Their fate has been tied to the Post Office use of railways: in more recent years both have declined. The photograph below shows one such truck towing carts of mailbags at Chester station in 1934.



Elecric transport on a railway station

Oxford was the test bed for another experiment with an electric vehicle: the Bradshaw Carryall. Proving useful for deliveries in the city centre. In 2006 three of these vans remained in regular use and were both practical and popular with their drivers.

The installation of on-site wind generators for recharging the vehicles is being investigated to further reduce the impact on the environment.

As local authorities introduce increasingly stringent restrictions on vehicle usage, or introduce congestion charges as in Central London, the lessons learnt from these alternative fuel vehicles will prove invaluable as the Royal Mail fleet evolves into the future.

"The electric vehicle provides the best chance of meeting the future vehicle emission and noise demands in the most sensitive urban areas."

Mike Horlor, Head of Royal Mail Transport, in Postal Technology 1996





United States

The history of the postals service in the USA is much jounger than those in European Countries.

The first postal service in America arose in February of 1692, when a grant from **King William & Queen Mary** empowered **Thomas Neale** "to erect, settle and establish within the chief parts of their majesties' colonies and plantations in America, an office or offices for the receiving and dispatching letters and pacquets, and to receive, send and deliver the same under such rates and sums of money as the planters shall agree to give, and to hold and enjoy the same for the term of twenty-one years."



Benjamin Franklin (1706 - 1790)

The United States Post Office (U.S.P.O.) was created in Philadelphia under Benjamin Franklin in 1775, by decree of the Second Continental Congress. Based on the Postal Clause in Article One of the United States Constitution, empowering Congress "To establish post offices and post roads," it became the Post Office Department (U.S.P.O.D.) in 1792. Until 1971, it was part of the Presidential cabinet and the Postmaster General was the last person in the United States presidential line of succession.



Queen Mary (1662 - 1694)

King William III (1459 - 1519)

At the turn of the twentieth century, the production of automobiles in the United States was about equally divided among electric, steam, and gasoline-powered models. The Post Office Department tried all three types for mail collection in cities.

Although more expensive than horse-drawn vehicles, motor vehicles were able to cover the same distance in less than half the time and were gradually adopted by mail transportation contractors

The first known test of an electric vehicle for mail collection was in Buffalo, New York, on July 2, 1899, when Buffalo's superintendent of city delivery, driven by an electric car promoter in his Columbia automobile, collected mail from 40 boxes in an hour and a half – less than half the time it took with a horse drawn wagon

In December 1899, an electric vehicle was tested in Cleveland, Ohio

The first known contracts for transportation by automobile, however, were for electric models.

In early 1901 the Post Office Department contracted with the Electric Vehicle Company of New York for the transportation of mail between the Buffalo Post Office and a temporary postal station at the nearby Pan-American Exhibition, which ran from May through October 1901.



Cleveland, Ohio (1899)

Washington, D.C. (1900)

In early 1900 in Detroit, Michigan, tests of automobiles were carried out. An electric model by the Wood Motor Company was tested on January 10 for carrying mail between the main Post Office and its stations, and on February 14, a gasoline-powered model by the Detroit Automobile Company was tested on the same routes.

Both vehicles were more than twice as fast as horse-drawn wagons; the gasoline-powered automobile was slightly faster than the electric one.

The optnion of the local postmaster was: "an automobile operated by gasoline will be far preferable" for carrying mail, as it would not have to spend equal hours out of service, recharging.

EAEC



Later in 1901, the Department contracted with the Republic Motor Vehicle Company for five electric vehicles, with operators, to collect mail from boxes in Minneapolis and to carry mail between the Post Office and its stations beginning January, 1902.

Buffalo. New York (1901)

1915, the superintendent of mails in Washington, D.C., told the Electric Vehicle Association.

"If machines of the electric type can be built with sufficient speed and hill-climbing qualities to meet the

requirements of the collection service they would undoubtedly be found to be particularly desirable . . . the

fact that electric machines are so much more simple of operation and can be easily driven by carriers, without the extra cost of chauffeurs . . . is a decided advantage in their favor."

Starting in in the 1950s, there were some small attempts to test electric vehicles for postal service with no significant consequences.

In the last years when the electrification of vehicles came into discussion, the postal service began again to test electric vehicles in several sizes.



The greatest fleet of electric taxies after were in New York. The first taxicab company in New York City was the Electric Carriage and Wagon Company, which began running 12 electric hansom cabs in July 1897.

The company ran until 1898 with up to 62 cabs operating until it was reformed by its financiers to form the Electric Vehicle Company. The company then built the **"Electrobat"** electric cab which was the first successful electric automobile.

The Riker Motor Vehicle Company of Elizabethport, New Jersey, designed an electric automobile specifically for postal office. The vehicle weigted 1,800 pounds and could carry 200 poungds in addition to its operator.

On one charge it could travel 25 miles at 12 miles per hour. By August 1900, two of these vehicles were beeing used in Washington DC.

Although electric vehicles held on in the commercial market longer than in the passenger market, production gradually shifted to gasoline-powered models.

In 1914 in New York – the state with the most registered vehicles at the time – electric vehicles accounted for about 6 percent of passenger cars and 29 percent of commercial vehicles. By 1917, however, nearly all of the commercial vehicles manufactured in the U.S. were gasoline models.



Segway, 2004

T2 2008



Electrobat" electric cabs.

In New York up to 100 taxicabs were running in total by 1899. 1899 also saw a number of notable firsts for the Electric Vehicle Company. Henry Bliss became the first victim of an automotive accident in the United States when he was hit by an electric taxicab as he was helping a friend from a streetcar.

By the early 1900s the Electric Vehicle company was running up to 1,000 electric taxicabs on the streets of New York City until, in January, 1907, a fire destroyed 300 of these vehicles which, in conjunction with the Panic of 1907 caused the company to collapse.

In 1907, following the collapse of the Electric Vehicle Company, horse drawn cabs once again became a primary means of transport around New York City.

Later that year he imported 65 gasoline-powered cars from France and began the **New York Taxicab Company.** The cabs were originally painted red and green, but Allen repainted them all yellow to be visible from a distance. By 1908 the New York Taxicab Company was running 700 taxi cabs



Horse drawn Taxi



EAEC Member Societies

Austria

Austrian Society of Automotive Engineers **OEVK** Tel.: +43 1 585 27 41-0 E-mail: info@oevk.at



Belgium

http://www.oevk.at

Union Belge des Ingenieures de l'Automobil **UBIA** Tel.: +32(0)10 22 7664 E-mail: ubia@bskynet.by http://www.ubia.be



Croatia

Croatian Societyfor Engines and Vehicles **CroSEV** Tel.: +86 10 633 45 599 E-mail: medica@ru.rith.hr



Finland

Suomen Autiknillinen Litto r.y. SATL Tel.: +420 224 352 498 E-mail: satl@satl.fi http://www.satl.fi/



Germany

VDI-Gesellschaft Fahrzeug-und Verkehrstechnik **VDI-FVT**

Tel.: +49 211 6214 223 E-mail: fvt@vdi.de http://www.vdi.de/fvt



Italy

Associazione Tecnica dell'Automobile ATA Tel.: +39 011 9083 559

DAL

Lithuania

E-mail: ata@crf.it

http://www.ata.it

Lithuanian Society of Autom. Eng. LAIS Tel.: +370 5 2744 792 E-mail: saugirdas.pukalskas@ti.vtu.lt

http://www.lais.lt/

Romania

Societaea Ingeerilor de Automobil din Romania SIAR

Tel.: +40 21 316 9608 E-mail: siar@siar.ro http://www.siar.ro



Belarus

Academic Automotive Association AAA Tel.: + .: +375 172 92 1562 E-mail: vgorbash@bntu.by http://www.bntu.by

Bulgaria

Society of Automotive Engineers in Bulgaria

SAEB Tel.: +359 82 888450 E-mail: barzev@ru.acad.bg http://www.ru.acad.bg/



Česká Automobilová Společnost Tel.: +420 224 352 498 E-mail: cas-sae@email.cz http://www.cas-sae.cz/



Société des Ingénieurs de l'Automobile SIA Tel.: +33(0)1 41 44 93 73 E-mail: info@siafr http://www.sia.fr/



Gepipari Tudomanyos Egyesulet **GTE – Vehicle Devision** Tel.: +36 1 202 0582/0656 E-mail: mail.gte@mtesz.hu http://www.gte.mtesz.hu/

Latvia

Latvia Association of Automotive Engineers LAIA Tel.: +371 951 2364 E-mail: jpg@one.lv http://www.laia.lv/



Poland

Towarzyszenie Inzynierowl Techniow Mechanikow Poliskich SIMP Tel.: +48 22 846 0011 E-mail: ajank@ilot.edu.pl http://www.ptim.simp.pl/ptim/

Russia

Association of Atomotive Engineers - Russia AAE Tel.: +7 495 994 9915

E-mail: a.gusarov@bk.ru http://www.autoengineer.org/





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САИБ





Serbia

Jugoslovensco Drustvo za motore i vozila JUMV Tel.: +381 11 3370 358 E-mail: dalek@jumv.org.yu



Slovenia

Association of Mechanical Engineers and Technicians of Slovenia – Automotive Group

AMTS-AG E-mail: ernej.klemenc@fs.uni-lj.si

http://jumv.celtdevel.com/sr/



Sweden

Swedisch Vehicular Engineering Assiciation **SVEA**

Tel.: +46 31 169 985 E-mail: info@sveafordon.com http://www.sveafordon.com/

The Netherlands

Koninklijk Institut van Ingenieurs **KIWI NIRIA** Tel.: +31 15 269 6343

KIVI NIRIA E-mail: jan.wismans@tno.nl http://afdelingen.kiviniria.net/voertuigtechniek

Slovak Republic

Spolok Automobilovych Inzienirov A Technikov Slo-

venska SAITS Tel.: +421 2 5729 6306 E-mail: saits@saits.bts.sk http://www.saits.bts.sk/



Spain

Sociedad de Técnicos de Automobilón STA Tel.: +34 93 233 24 47 E-mail: sta@stauto.org http://www.stauto.org



Society of Automotive Engineers, Switzerland SAE Switzerland SA Tel.: +41 31 302 36 24

E-mail: daniel.christen@sae-switzerland http://www.sae-switzerland.ch

United Kingdom

Institution of Mechanical Engineers --Automobile Section **IMechE** Tel.: +44 20 7973 1316 E-mail: <u>| mckenna@imeche.org</u> http://www.imeche.org/



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FISITA

Office: 30 Percy Street London, W1T 2DB United Kingdom Phone: +44 (0) 20 7299 6630 Fax: +44 (0) 20 7299 6633 E-mail: info@fisita.com http://www.fisita.com/



Automotive Technology

FISITA Magazine

Editor-in-Chief: **Roland Schedel** Phone: +49 6128 853758 Fax: +49 6128 853759 http://www.atzonline.com/



EAEC

President/Office Brigadier ret. Prof. Günter Hohl c/o Austrian Society of Automotive Engineers Elisabethstrasse 26 1010 Vienna Austria Phone: +43 1 585 27 41- 60 E-mail: guenter.hohl@oevk.at http://www.eaec.net



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EAEC Magazine Publisher Director: Paul Williams PE Publishing Ltd 1 Birdcage Walk, London, SW1H 9JJ. United Kingdom Phone: +44 (0)20 7304 6805 http://www.ae-plus.com/

