ICCVE 2014
The 3rd International Conference on Connected Vehicles and Expo
“The future of mobility enabled by Connected Automated Vehicles”

ICCVE 2014 is the world’s premier Connected Vehicles conference that gathers all the relevant communities together. During the 5-day conference, experts, practitioners and policymakers from all around the world will present the latest innovations and advances on connected vehicles, share the experience and insights, forecast the trends and opportunities, and discuss the policy, economics and social implications. We are proud and excitedly inviting you to participate in and enjoy this world-class event.

### ICCVE 2014 Program at a Glance

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30</td>
<td>Registration</td>
<td>Breakfast on Own</td>
<td>Breakfast on Own</td>
<td>Breakfast on Own</td>
<td>Breakfast on Own</td>
</tr>
<tr>
<td>10:00</td>
<td>Morning Plenary Session</td>
<td>Networking Break</td>
<td>Morning Plenary Session</td>
<td>Networking Break</td>
<td>Morning Plenary Session</td>
</tr>
<tr>
<td>10:20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:20</td>
<td>Lunch on Own</td>
<td>Networking Lunch &amp; Interactive Session</td>
<td>Networking Lunch &amp; Interactive Session</td>
<td>Networking Lunch &amp; Interactive Session</td>
<td>Networking Lunch &amp; Interactive Session</td>
</tr>
<tr>
<td>13:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:00</td>
<td>Opening Plenary Session</td>
<td>Networking Break</td>
<td>Opening Plenary Session</td>
<td>Networking Break</td>
<td>Opening Plenary Session</td>
</tr>
<tr>
<td>16:30</td>
<td>Networking Break</td>
<td>Networking Break</td>
<td>Networking Break</td>
<td>Networking Break</td>
<td>Networking Break</td>
</tr>
<tr>
<td>17:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:00</td>
<td>Networking Break</td>
<td>Networking Break</td>
<td>Networking Break</td>
<td>Networking Break</td>
<td>Networking Break</td>
</tr>
<tr>
<td>19:00</td>
<td>Wrap-up Plenary Session</td>
<td>Wrap-up Plenary Session</td>
<td>Wrap-up Plenary Session</td>
<td>Wrap-up Plenary Session</td>
<td>Wrap-up Plenary Session</td>
</tr>
<tr>
<td>19:30</td>
<td>Networking Reception</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20:30</td>
<td>Dinner on Own</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Photos courtesy of Vienna Tourist Board*

* Subject to final editing
P1 Legal framework for introduction of connected/automated vehicles to the transportation system

Numerous regulatory regimes are worldwide in place to manage and control traffic. National governments around the world have set up regulations on national legal frameworks. Regulatory regimes are more or less necessary to prevent cross-country and for the national supply of goods and services. Moreover, the automation of vehicles is a game changer in terms of cross-border and cross-territorial cooperation and regulations to gain harmonization. Do we need to work out a joint policy road map for the introduction of connected vehicles into the transportation system? On what policy level is necessary to take the lead in harmonization? Who is interested to take the leadership role? How to avoid institutional silos to ensure the deployment of cooperative ITS systems?

P2 Evolution or revolution (= radical change) of the global mobility/transport system by deployment and implementation connected/automated vehicle technologies and autonomous driving. Are partnership and cooperation between public and private sector organizations ready to achieve implementation?

Currently there is a broad discussion regarding the technology readiness level of connected/automated vehicles. How and how fast are these technologies expected to reach a level of maturity and robustness that their introduction into connected/automated technologies for autonomous driving can be easily achieved. Will the introduction of connected/automated vehicle technologies gain the expected improvements on road safety and road capacity efficiency? Will technological change towards connected/automated vehicles happen by radical change or in a stepwise approach (SAE Level 0-4)?

P3 Which technologies will pave the way to automated vehicles? - Which industry sector is expected to take a leading role?

The recent years have shown incredible progress in the development of sensors and communications to be applied in the connected/automated vehicle environment. Quite a number of this components are developed in cooperation to each other. Which technologies will finally pave the way for safe, reliable, and cost effective automated vehicle driving? Can we achieve an attractive cost benefit ratio to convince customers?

P4 Industrial standards - what global harmonization regarding technology standards do we need. Will respective standards be available in time? How will the experiences made in FoI’s be collected to improve standards?

All emerging technologies cooperate on technology standards. Will we achieve a common set of technology standards answering to drive around the globe without restrictions? Will we be able to enhance technology standards by systematically collecting evidence gained in the FoI’s executed in US, Asia and Europe? Are technology standards regarding communication and transmission profiles (where done) already reflecting global harmonization?

P5 Automated vehicle driving on digital roads: Connected/automated vehicle technologies can change the way of future transport. How will these technologies enroll? What potentials and risks are involved with such technologies, in particular in a transition phase with automated and non-automated vehicles are using the same infrastructure.

Currently the new connected/automated technologies will change the way of future transport. How will these technologies enroll? What potentials and risks are involved with such technologies, in particular in a transition phase with automated and non-automated vehicles are using the same infrastructure. New demand will occur to manage traffic flow and incidents, real-time availability, data reliability and quality. What will be the role/responsibility of Infrastructure Operators/Traffic Managers in an automated vehicle environment?

P6 Societal impacts and expectations introducing automated vehicles. Connected/automated vehicles are expected allowing to use road vehicles by many more people than before with the very old, young people as people limited to driving. What will be consequences for the overall mobility and transport systems (economy, ecology, individual mobility, public responsibility, etc.)?

Automated vehicles will allow almost everybody in the age between 1 and 100 years to use road vehicles including persons today limited to driving. This technological utopia as a prominent vision to easily access individual mobility in a car will increase the number of road users on road infrastructure. Assisted driving and in a long-term perspective autonomous driving will increase comfort and accessibility of car use even in congested cities. Roadside capacity shortages are expected to increase, but on the same time congestion is expected to be balanced by traffic control. A policy regime allowing access to road infrastructure only along with available roadspace capacities may be expected in the horizon. This will reduce a completely new legislation to rule out access rights to road infrastructure.

Summits

S1 NHTSA decision to move towards regulation on V2V – What’s the real impact (policy / business / standards)?

With the announcement by NHTSA earlier this year, all US vehicles will someday have DSRC technology on board. While it will take several years before a substantial market penetration, benefits will start accreting each year as traffic awareness and penetration increases. V2X communications will provide many new opportunities for travelers. Any regulation NHTSA creates, affects future production vehicles, have substantial impact on infrastructure, as well as on aftermarket and mobile devices. Will NHTSA making a similar decision for trucks in 2014?

S2 Framework of standards in the connected/automated vehicles environment - enable or burden for fast introduction into real traffic?

Proper standardization is a key issue for successful market penetration specifically in the area of transportation/mobility. These standards affect technical/functional level as well as operational and legal level. Currently, standard development organizations (e.g. technical/technological level). How can we assure the results are complete, seamless and there is no overlap in a contradictory way for fast deployment? Are the results scientifically sound and do they provide evidence on systems stability and performance? Are they meaningful enough to prepare decisions for full deployment? Are they rock solid to transform the transportation industry?

S3 Connected/automated vehicles field trials – are the results meaningful enough to transform the vehicle/transporation industry?

Actually a number of field trails on connected/automated vehicles are established in Europe, USA, Japan, etc. They are mostly operating in a ‘protected environment’ (e.g. dedicated motorways, university campus, rural areas, etc.). Can we really transform these results to worst case scenarios in densely congested/high populated areas in the big cities? How do we manage the transformation process?

S4 Roadmap for deployment of connected/automated vehicles on road. Who takes the leading role: industry or government?

Industry and public institutions all around the world have spent a vast amount of money already for the development of connected/automated vehicles. Should there be more co-operation between countries and between the vehicle industries? Do we need the competition between the industry players? Cooperation between the global regions (USA, Europe, Asia) is already established on level of information exchange and sharing of infrastructure programs. More effective instruments should be established to efficiently utilize available public funds for R&D and industrial development with the goal to achieve faster, more coordinated development to gain the positive effects expected from these technologies in the overall transport/mobility system.

S5 What standards are required for the introduction of connected/automated vehicles on road?

In February 2014 the EU has released the Version 2 of Cooperative System standards following the mandate MROs to standards development organizations (ISO) is in 2009 and the completion of the first phase of their work. From the basic message sets for C-V2X to also for specific applications for traffic information like SMAT/MAP in cities or In-Vehicle-Signage (IVS) a starting point for deployment in first corridors is now available. How are the next steps for standards supporting robust roll out schemes planned and who is regularly contributing to these in the future?

1) What are the results of regional field trails (effectiveness)?
2) What are the open topics? When is a revision of the current standards needed?
4) What standards follow technological development or vice versa?

S6 Field operational trials on connected/automated vehicles – USA, Europe, AP - what can we learn? Can we achieve a wide user acceptance near term?

There have been several connected vehicle field trials around the world (using DSRC), including Safety Pilot lots (US), DRIVE C2X (Europe), and so on (Japan...). How have these field trials been meaningful enough to transform the transportation industry and user behavior? What are the lessons on technology development and deployment of connected/automated vehicles? Should there be more co-operation between countries and between the vehicle industries? Do we need the competition between the industry players? Cooperation between the global regions (USA, Europe, Asia) is already established on level of information exchange and sharing of infrastructure programs. More effective instruments should be established to efficiently utilize available public funds for R&D and industrial development with the goal to achieve faster, more coordinated development to gain the positive effects expected from these technologies in the overall transport/mobility system.

1) Discussion of results of regional field trials (effectiveness)
2) Lessons learned for future deployment
4) Future Activities

S7 Who takes the lead in future connected/automated vehicles environment: Automotive OEM or IT supplier?

Observing actual industry activities in new functionalities for the next generation of road vehicles one can observe that the ‘big data industry’ like Google, IBM… aggressively interfere into the mobility market. Will there be a change from ‘physical mobility providers’ (OMM) to ‘virtual mobility providers’ (big data operators)? Automotive industry is facing a new challenge in the perception of their products and in the overall customer relations to vehicles and brands versus changed mobility behavior and regular patterns that rely on mobility services as a commodity not depending from an own car. If the ‘connected lifestyle’ is the ultimate condition of being mobile what are the ways to support these trends and how is interaction with customers generating new insights and overall brand loyalty on the long run. Which threat are to our society?

Subtopics:
1) Change/Loss of customer relation because of using instead of owning a vehicle?
2) Mobile device preferences in my car?
3) Change/Loss of customer relation because of using instead of owning a vehicle?
4) What potentials and risks are involved with such technologies, in particular in a transition phase with automated and non-automated vehicles are using the same infrastructure.
5) Do we need local, regional, national or global standards?

S8 Traffic management in a connected/automated vehicles environment - Traffic Management 2.0

Traffic management has been installed by local, regional, national, and state governments around 100 years ago when the increasing number of vehicles (either moved by horses or combustion engines) required common rules for the safe and efficient operation of road users. The goal was to ensure safe driving and to maximize the use of road infrastructure. Within the next 3 decades, we can expect a significant share of connected/automated vehicles on roads without a driver behind the steering wheel. A major part of traffic management would be performed by vehicles independently in the future. Which tools and technologies will be required by the infrastructure operator in a connected vehicle environment? What will be the future responsibility of public authorities in this area? Which will be the task of the infrastructure operator in a connected vehicle environment? Which other players will be integrated into future traffic management? Are we able to communicate traffic management changes to a large number of mobile users quickly and effectively? How do they feedback their mobility experiences? Is Traffic Management 2.0 optimizing by self learning in a centralized and rule based or something else?

S9 Real-time transportation data - so what? Access to data, value, cyber security

Currently traffic managers communicate to travelers their short term reactions and consequences of traffic management efforts based on the short term predictions based on distributed sensor networks or elaborated traffic management plans for specific periods of the day. The concept of the connected driver and traveler is being widely accepted and adopted to take this role in the future. Are large distributed communication networks necessary on corridors and in urban areas to accomplish or is traffic information only one additional mobile application for most travelers and drivers on their way? What options need to be discussed from a technical and organizational point of view? How are the relevant data for my personal mobility decisions collected, processed and delivered to me in a customer friendly way?
S10 Smart Cities and Connected Vehicles collaborating as teams

The challenge for safer and more efficient mobility for all travelers is tackled by cities and cities alike. Both car manufacturers and their suppliers as well as municipalities and their respective suppliers of intelligent road infrastructures will act in their quest for Smart Cities. While communication technologies are used for many years, recent activities concentrated on proper interoperability and joining forces to foster participation and collaboration between all stakeholders. What are the current findings and the next steps for a fast deployment?

S11 Consumer Devices and Applications - Driving the Connected Vehicles Environment and Technologies

What will the connected future transport look like? A handheld device, e.g. the central steering element to move the future automated vehicle? Will that be the end of CRM (customer relationship management) OEM to user? Will there be a full transition to Google, TomTom, etc. as main contact point for supporting mobility of individuals/transport industry?

S12 Satellite navigation and positioning in a connected/automated vehicle environment

Satellite positioning in cars is already implemented either as in-built system or 3rd party navigation devices. In all cases the driver has final responsibility to keep the car on road not following any obstruction may be shown in the navigation device. Once driverless cars on road using satellite based positioning the requirements on precision, update rate, etc. are much higher for automated vehicles to ensure precise positioning even in worst case scenarios (urban canyoning, narrow valleys, etc.). Will reliable applications available under all conditions near term?

Industry Forums

F1 Mobile devices - will they play a key role operating automated vehicles? Mobile apps for transportation: system integration, business models, and social impact

The device need to identify the user, the mobility request (e.g. destination), matching the solutions with the actual needs in an important aspect for any practitioner developing as well as deploying and operating cooperative infrastructure solutions. This summit shall highlight the range of positions as held by different stakeholders and discuss the potential roles that individual end users or various automated vehicles can and should play in deployment and operations. Is it possible to reach a consensus, which promotes the development of solutions that are welcome and accepted by drivers, implemented and paid by the different road operators as well as service providers? It is possible to paint a roadmap that promises regret not in this innovative field – a roadmap that describes the roles of current and future stakeholders as well as technological building blocks.

F2 Transportation big data: opportunities and challenges. Applications? Who will benefit most?

V2X communication will generate a huge amount of data due to the highly reactive character of messages exchanged specifically for V2X communication. Does it really make sense to collect, store and process all these data to enrich context? For which purpose will they be required? Which services will be supported by this data? Will they interfere with privacy issues of the car users? Is there a role for infrastructure operators who provide the data? Will new service providers be able to tap the market?

F3 Connected vehicle property consideration, electrification and grid readiness and required services

Which propulsion system will be most appropriate for connected vehicles? Technology screen and vehicle concepts. Which technology will take the lead? Will there be an impact to extend the range of the electric vehicle by more economic driving? Can we achieve a reduction in CO2 emissions? Will we expect new vehicle concepts (light weight structures)?

F4 Wireless Sensor Networks and convergence of telematics and DSRC applications: solutions, value chain, and ecosystem (Automotive, Rail, Aeronautics)

Internet of Things in the transportation industry

F5 New use cases, services and business models enabled by connected/automated vehicles

Will there be a paradigm change from the user perspective: can use a car possession? Standard vehicles vs luxury cars? Will the high class cars and luxury vehicles disappear from the market?

F6 What disruptive changes in the transportation industry will be enabled by next-gen IOT technology (5G, etc.)?

USDoT has recently announced their strategy for the implementation of 5G/6G into the transport system. This will push developments an applications to exchange data in the V2X environment. But there are also other aspects on the screen to support wireless data exchange V2X. Will they have a significant impact to change processes and operation of the transportation industry? On which areas will they appear, which processes will be impacted?

F7 Traffic management in the future

A connected/automated vehicle will operate in a connected/automated traffic environment on local, regional, national, global level. Are network operators or connected/automated road and traffic management systems or other involved parties. Defining cooperative infrastructure in the current phase of series production exposes product designers to interesting challenges. While technology solutions somehow find their way, the spectrum of addressed benefits as requested by stakeholders is heterogeneous. Matching the solutions with the actual needs is an important aspect for any practitioner developing as well as deploying and operating cooperative infrastructure solutions. This summit shall highlight the range of positions as held by different stakeholders and discuss the potential roles that individual end users or various automated vehicles can and should play in deployment and operations. Is it possible to reach a consensus, which promotes the development of solutions that are welcome and accepted by drivers, implemented and paid by the different road operators as well as service providers? It is possible to paint a roadmap that promises regret not in this innovative field – a roadmap that describes the roles of current and future stakeholders as well as technological building blocks.

F9 Connected/automated vehicles - safety, efficiency, and the cost/benefit aspect

Today the number of fatalities in transportation count to around 800,000 every year growing to possibly 1.2 million by 2025 globally. In 2013, UN-ECE has launched a ‘Decade of Action’ to countermeasure this unacceptably high number of road fatalities. The upcoming implementation of V2X communication together with the developments of Advanced Driver Assistance Systems (ADAS) in next generation vehicles will facilitate automated driving with the potential to reduce the number of fatalities as well as any other accidents through a better traffic flow. Which technology will take the lead? Will there be an impact to extend the range of the electric vehicle by more economic driving? Can we achieve a reduction in CO2 emissions? Will we expect new vehicle concepts (light weight structures)?

F10 Coordinating R&D activities and funding for the development of automated vehicles across the global regions

Countries and Regions, like EU, USA, Japan, spend a huge amount of money every year for the technological development in the area of connected/automated vehicles. Cooperation between regions has already been established on this subject since several years. Is there room for deployment or just competition between these areas?

Problem-Solving Workshops

W1 End-to-end quality management for connected car information services

User experience, success factors for connected cars

Today’s use of in-car interactive technology is not only more restricted to a central built-in support unit. Instead, drivers and passengers are benefitting from various pervasive communication and entertainment options on their personal electronic devices. This evolution of technology has created new challenges for car manufacturers, who have to ensure consistent and accurate information is presented to the driver. The presentation of information on the device need to identify the user, the mobility request (e.g. destination), matching the solutions with the actual needs in an important aspect for any practitioner developing as well as deploying and operating cooperative infrastructure solutions. This summit shall highlight the range of positions as held by different stakeholders and discuss the potential roles that individual end users or various automated vehicles can and should play in deployment and operations. Is it possible to reach a consensus, which promotes the development of solutions that are welcome and accepted by drivers, implemented and paid by the different road operators as well as service providers? It is possible to paint a roadmap that promises regret not in this innovative field – a roadmap that describes the roles of current and future stakeholders as well as technological building blocks.

W2 Reference architectures and required standards for connected/automated vehicles

Reference architectures have been proposed on the level of testing: there seems to be some overlapping between standard developing groups- which may cause additional effort for vehicle OEM and supplier development. Which reference architecture or specification platform do you think will be the right one to ensure consistent development, interoperability and the integration of future extended functionalities in the connected vehicle environment?

W3 New business models and ecosystems enabled by connected/automated vehicles. Visions of the industry

Introduction of automated vehicle into the road transport system will introduce new services provided by new actors. There will be conflicting areas between new service providers and traditional infrastructure operator or transport operators

W4 Consumer experience and acceptance of connected/automated vehicles

Individual mobility supported by automated vehicles will be a new experience for the users. What’s about acceptance and how will consumers explore new activities while moving?
General Chair:
Reinhard Pfiegl

General Co-Chair, Americas:
Lee Stogner

General Co-Chair, Asia Pacific:
Yu Yuan

Program Chairs:
Joachim Taiber
Wei-Bin Zhang

Program Co-Chairs:
Jane Lappin
Gianfranco Rizzo
Stephen Dukes
David Dorrell
Alexander Gelman
SM Hasan
Jaime Lloret Mauri

Treasurers:
Charles Rubenstein
Yu Yuan

Executive Committee:
Mike Schagrin
Narisa Chu
Thomas Coughlin
Michael Andrews
William Lumpkins
Victor Huang
Walid G. Aref
Bruce Kraemer
Paul Nikolich
Greg Krueger
Matthew J. Barth
Alexey Vinel
Sanjay Goel
Javier Gozálvez

Patronage and Exhibition Opportunities

Patrons and exhibitors will become a part of our business network that is being built to develop / deploy products and services across cars, trucks, equipment, trains, ships, airplanes and the Intelligent Highway. We want to help you meet potential customers from around the world that will be interested in your products and services. We will ensure that you will have access to the leaders of the new Connected Vehicles world during the conference and long afterwards.

A limited number of patronage opportunities and exhibition packages are available. Please inquire of our exhibits committee (exhibits@iccve.org).

For more information, visit http://www.iccve.org/2014