
Broadband connectivity everywhere – Satellite communication for cars

Munich / Ottobrunn, 17.02.2016.

After its world premiere on the CES in Las Vegas this year, Rinspeed's visionary concept car „Σtos“ will have its European premiere at the Geneva Motor Show starting on March 1st, 2016. As a project partner to Rinspeed, the German VITES GmbH will be presenting their visionary solution for automotive satellite communication (SATCOM) that enables broadband car connectivity even in areas without coverage of mobile/cellular networks.

Today's megatrends like e.g. autonomous driving, digitized vehicles, intermodal traffic, Car2Car communication and big data analytics are changing vehicles' roles to more and more become nodes within the Internet-of-Things (IoT). Only a few years ago, the objective of the car industry was getting internet connectivity into the car, but now, vehicles are becoming connected data sources in the internet. The digital connectivity enables the implementation of new services in the areas of traffic management, environment, safety and customer communication. These services require reliable, secure and global vehicle connectivity.

The VITES GmbH („VITES“), member of the IABG Group with core competence in the area of professional wireless systems, is a great example for the innovative performance of the German industry.

VITES' innovative and disruptive wireless technology that combines flat *Phased-Array-Antennas* with *Software Defined Radio*, enables significant improvements in car connectivity. By dynamically adjusting the wireless systems' receive- and transmit characteristics to the given transmission channel conditions, data throughput, range and link stability are maximized. This is achieved by using advanced techniques like fully electronic *Adaptive Radio Beam Steering*, *MiMo* and multiple simultaneous beams.

A modular construction kit allows flexible and fast reactions to the requirements of the automotive industry, i.e. the car manufacturers as well as their suppliers. It also enables the generation of solutions tailored exactly to customers' needs. The essential system parameters can be adjusted according to requirements like size, application and local market needs. For the automotive market, various wireless products are in development, e.g. for satellite communication of vehicles (SATCOM-On-The-Move), CAR2X and systems with MIMO and Beam Forming for optimized LTE connectivity.

Even in the market for compact cars, connectivity features have become key buying criteria. But even more, vehicle connectivity is fueled by the needs of autonomous driving scenarios and the associated infrastructure networking requirements. However, most of the connectivity related services depend on the availability of mobile-/cellular communication networks whose quality strongly varies between operators and regions. In densely populated metropolitan areas of the industrial countries, megacities and along the major highways, the coverage of 3G and 4G(LTE) networks has meanwhile become very good, in rural areas it is still pretty incomplete.

Driven by the omnipresence of smartphones, the expectations of drivers concerning connectivity are rising dramatically, even in remote territories of the large nations and in the emerging countries. In such regions, vehicles equipped with SATCOM-On-The-Move systems can be the solution for improved availability of network access remote from cities and arterial highways.

Projekt Σ tos

For the Σ tos (read "etos") car, VITES is the provider of a visionary solution for satellite communication (SATCOM-On-The-Move) that enables global broadband vehicle connectivity to the Internet and thus realizes "always online" even in rural areas. The Σ tos SATCOM system consists of two separate units, one for transmit (TX) and one for receive (RX), a concept which has been chosen in order to accomplish extremely compact units. Both integrate a flat *Phased Array Antenna* capable of *Adaptive Beam Steering*. This technology performs the automatic direction of the TX and RX radio beams towards the satellite and thus tracking it's movement relative to the car in real time. The SATCOM system operates in the Ka-frequency band and supports e.g. connectivity to High-Throughput-LEO-Satellites. No moving mechanics is required and it is free of attrition. It does neither disturb the car design nor its aerodynamics as it is integrated form-fit below the glass roof. For autonomous driving and the provision of data based mobility services in rural areas, this technology is ground breaking. Due to its flexibility, compact shape and outstanding performance as well as the worldwide usable technology, it has the potential to become the solution for global broadband communication across all classes of cars and vehicles.

About VITES:

VITES GmbH („VITES“)

The VITES GmbH ("VITES") is a young, dynamic, fast growing organization that focusses on radio and wireless products, systems and technology for professional markets and applications. With its market leading ad-hoc networking product line known as "HiMoNN" which is well established in Security and Disaster Management scenarios and the new, groundbreaking radio beam steering and software defined radio technology platform called "KARsys", markets like e.g. Security, Avionics, Transportation, Automotive, Industrial and Telecommunications are served.

VITES is member of the IABG Group and its headquarter is located on the IABG campus in Ottobrunn, south of Munich, Germany.

Media contact:

VITES GmbH
Einsteinstraße 32
85521 Ottobrunn
Germany

www.vites.de

Martin Gassner
Managing Director

Tel. 089 6088-4600
Email: info@vites.de