Accelerated and cost effective deployment of V2X solution

ITS Israel
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Autotalks in a Nutshell

» Business: Fabless semiconductor company

World’s leading provider of integrated Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) communication (referred to as V2X) chipset for vehicle safety and mobility applications

» Legal: Incorporated in Israel, 2008

Privately held company, backed by leading venture capital funds

» Offices: Headquarters and R&D center: Israel

Sales offices: France, Germany, Japan, Korea, Spain, Sweden, USA
Autotalks and STMicroelectronics
Strategic partnership

» Autotalks and STM partner towards mass-market V2X chipset offering
» STM expertise is a perfect match with Autotalks V2X technology lead

Advanced high volume manufacturing
Top quality

Accelerated time-to-market
Product longevity

Unrivaled V2X solution
Safety critical V2X
Wireless technology enabling infrastructure to deliver data to vehicles (V2I) and vehicles to exchange information such as position and speed with other vehicles (V2V)

Primarily using 5.9GHz band

Ratified standardization enables interoperability of communication, security and messaging
V2X Market Drivers

USDOT moves forward on V2X mandate for light vehicles
“V2X can prevent >80% of traffic accidents”

V2X is key technology for Autonomous Driving
Highly automated cars expected by end of decade

V2X can reduce fuel consumption, CO2 emission and travel delays

field operational test carried out within research project simTD proves: Car-to-x communication is ready for everyday use
A full penetration of simTD functions could save 6.5 billion euros of annual economic costs from traffic accidents. Furthermore, the resulting efficiency effects and reduced environmental pollution could bring a macroeconomic benefit of 4.9 billion Euros.
“...US could be on the cusp of a great leap forward in automotive safety. All that’s required is ... to rally behind the scientists and engineers who have spent the past decade developing a wireless technology called V2X...

...All of us need to do our part to build a critical mass of V2V-equipped vehicles on the road on a much more accelerated timetable than regulation alone will drive...”

(Mary Barra, GM CEO, The Washington Post)

How to apply built-to-cost solution?

How to quickly introduce solution to market?

How to ensure uncompromised security?
Accelerating Series-Production V2X Designs

» What suppliers find in recently-published V2X RFQs?

- Multiple architecture variants (antenna, ECU, TCU, ADAS, etc.)
- Worldwide support in a single design (Europe, USA, Japan)
- Uncompromised requirements (Security, OOB filter, etc.)
- Complex supplier matrix and R&R (Antenna vendors/Tier1s, Software vendors)
- Strict cost-driven business case (BOM, royalties, NRE, integration, testing, etc.)

Source: USDOT NHTSA
What are the key technical requirements?

- Full automotive-grade solution with all building blocks (ramp-up availability)
- Low development risk and cost (business case, schedule)
- Fully compliant/interoperable software (industry standards, validation)
- Reliable safety application decisions (usability and user experience)
- Software quality meeting AutomotiveSPICE guidelines (safety-driven quality)
- Secure solution that will not be misused / manipulated (sustainable network)
Leveraging on a Mature All-included V2X Solution

» OEMs suppliers vary in hardware design capabilities and constraints (yet need to meet critical milestones and timeline)

» V2X chipset provider must offer all necessary building blocks

  ▪ Hardware: modem, CPU, high temperature range, cable compensation, out-of-band filter
  ▪ Software: simple V2X protocol stack integration, optional vehicle integration
  ▪ Security: hardware security module (HSM), line-rate verification, upgrade scheme
  ▪ Quality: automotive-grade qualification, production-grade software, AutomotiveSPICE

» Mature reference design and available modules can significantly accelerate development and integration cycles
Module for Accelerated Series Production

» V2X module accelerates hardware design
  - No need for RF design, bring-up, testing
  - Small form factor
  - Simple add-on to existing ECUs

» Module contains entire V2X functionality
  - Modem, security, processing
  - Pre-integrated software for blackbox solution

LG Innotek

Unex

WNC
V2X in Israel

» The bad
  ▪ 5.9GHz spectrum is not allocated
  ▪ No Automotive eco-system
  ▪ Government commitment and involvement is way behind other developed countries

» The good
  ▪ Value of innovation in transportation is recognized

» The opportunity
  ▪ V2X technology is a platform for offering disruptive applications

» Contact us:
  ▪ E-mail: info@auto-talks.com, Website: www.auto-talks.com