

C-ITS AT THE DOORSTEPS – LESSONS LEARNED FROM DEPLOYMENT PREPARATION, EVALUATION AND ASSESSMENT

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- Strategic Alliance of key actors for C-ITS deployment on European roads
- Involves infrastructure organisations and the automotive industry
- Focus on services with infrastructure involvement (I2V/V2I)



- 2011 formed
- 2012 Letter of Intent (recommendation to members to get involved in C-ITS deployment)
- 2013 Roadmap for initial deployment (guiding star for C-ITS deployment)
- 2014+ Expert network of various deployment and pilot initiatives
- 2015+ Supporting C-ITS Platform (via umbrella organisations)
- 2016+ Close relation to C-Roads Platform and Pilots
- 2018+ Preparing the next while ensuring Day 1 deployment

LESSONS LEARNED

- Bring in cooperation spirit – a cooperative mind
- Share your specifications / results / lessons learned
- Provide a platform for exchange of ideas / concepts / solutions
- Be pragmatic – issues have to be solved, no matter who does it
- Take up on EU level what calls for EU action
- Leverage your efforts – in sponsoring deployment or teaming up with co-funders (depending on policy / implementation perspective)
- It's about the user, stupid!
- Focus on a small portfolio of functionality because it eases implementation of operational infrastructure
- Pay attention to scalability of solutions
- Avoid technology debates for business model reasons

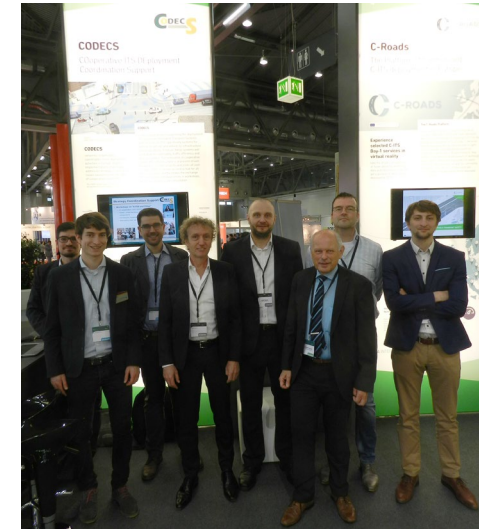
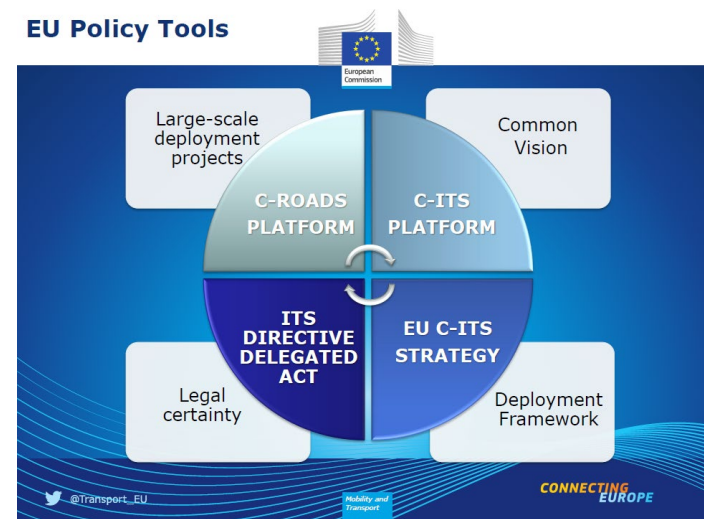
ACHIEVEMENTS



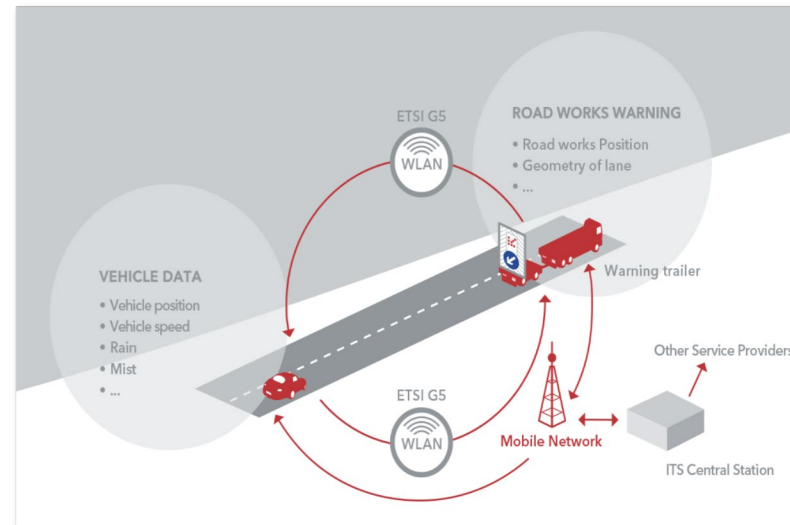
Get It In On The Road, Get It In the Vehicle.



- Provided a Platform for exchange of ideas, concepts and solutions
- Teaming up with supporting projects
- Advanced on the learning curve
- Thematic portfolio of issues to be solved taken up by key actors on EU level
- C-ITS Day 1 services deployment is at the doorsteps
- Balancing attention and efforts: preparing the next generation while ensuring Day 1 deployment
- Continued strategic importance



COST-BENEFIT ANALYSIS FOR ROAD WORKS WARNING IN THE C-ITS CORRIDOR



- Who: TU Munich/TÜV Rheinland (2018)
- What: Short term Road Works Warning (based on Road Works Safety Trailers)
- Where: Germany (as part of C-ITS Corridor)
- When: Snapshot CBA, Period of 2018-2032

- What is in - benefits:
 - Savings of accident costs
 - Savings of accident caused congestion
- What is not included:
 - Synergies with other C-ITS Day 1 services (e.g. Traffic Jam Ahead Warning)
 - Harmonisation of traffic flow (non-equipped users)
 - Route optimisation
 - Increasing level of vehicle automation

ASSUMPTIONS INTRODUCED TO THE COST-BENEFIT ASSESSMENT

- Field Infrastructure
 - Cooperative Module on Safety Trailers: 3,000 EUR (Investment)
 - Cellular communication costs per trailer: 300 EUR (until 2020), 180 EUR (post 2020) per year
- Traffic Control Center
 - Investment of C-ITS Upgrade: 240,000 EUR
 - O&M costs: 10% of invest/year
- Quantities
 - 3,000 trailers in motorway netw.
 - 16 (8) Traffic Control Centers
 - 10 years lifetime
- Accident patterns in approaching road works safety trailers
 - Collision with trailers
 - Merging accidents (→ lane closure)
 - Rear-end collisions
- Safety Impact
 - Earlier and more explicit warning
 - 30% of casualties can be avoided
- Appraisal (approx. values per e.g. fatality)
 - Based on Guidance from Federal Transport Investment Plan (damage costs plus risk value), e.g. 2.5 MEUR per fatality
 - Based on BAST cost unit rates (damage costs), e.g. 1.2 MEUR per fatality

BENEFIT-COST RESULTS

- BCR > 1 before 2020
- Pay off two-three years later when considering lower values for appr.
- Safety impact alone pays off the investment & operating costs
- Additional factors point to even higher BCRs
 - Additional Day 1 services to be introduced (center costs degress.)
 - Appraisal of additional impacts (at higher penetration)
 - Network externalities, a.o. towards National Access Points

