



International Telecommunication Union

E-call and Automatic Crash Notification (ACN) in vehicles

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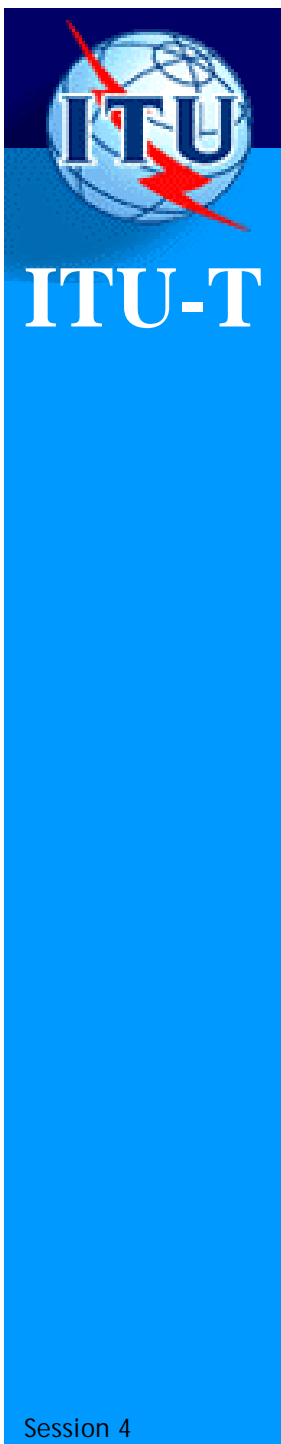
In the Vehicle, the Service that the Consumer *Really* Wants ...

- Delivers reliable, immediate emergency assistance after a crash
- Provides peace of mind, safety, and security
- Has **no** subscription complexity and **no** monthly or annual fee
- Is provided for the life of the vehicle as part of the vehicle purchase

Telematics Today

- o Current Emergency Call offers are bound up with many of the issues facing the market generally
 - Much of today's telematics has poor business models
 - High costs - Complexity - Low customer value

...as a result, many offerings have not met customer expectations or volume & financial projections
- o In addition, there are concerns about
 - Offering safety systems such as Automatic Crash Notification (ACN) that stop working if the vehicle owner does not make continuing payments
 - Confidentiality of customer relationships and critical vehicle data, which is not secure over the current telematics communications pathways



Land Side Platform (LSP) Concept

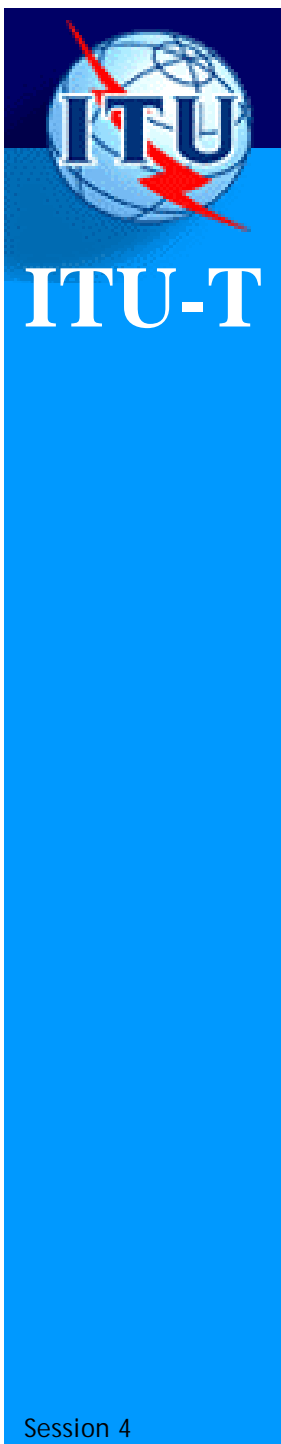
- A cooperative effort by several vehicle manufacturers to develop a new, more responsive vehicle data communications architecture
 - That meets their needs and interests and the needs of the purchasers of their vehicles
 - Built to provide opportunities for information and services providers to operate profitably
 - Structured to become a utility controlled by vehicle manufacturers, not a business selling a product
- Ygomi LLC is coordinating the development of the LSP concept
 - ...and is supporting the LSP Automotive Group, which guides this development

LSP and Vehicle Safety

- o The LSP concept is structured around support for safety:
 - A robust, reliable facility to route emergency data messages
 - Including the ability to handle multiple makes/models/years via protocol converters
 - Eventual support for probe (or 'floating car') messages to/from vehicles
 - ...but other (non-safety) types of messages handled as well
- o Cost for provision of a lifetime ACN facility would be included in the purchase price of the vehicle

'Traditional' In-Vehicle E-call

- An emergency wireless voice call that includes vehicle location
- Introduced by vehicle manufacturers in the 1990s as the initial telematics service
- Originally available only as a vehicle-based product
 - Generally using a telematics service provider as an intermediary between vehicles and PSAPs
 - Offered as a paid subscription service requiring periodic renewals and payments
- Recurring cost and lack of perceived value for the overall telematics service has resulted in
 - Many people not renewing the service
 - The vehicle equipment becoming redundant



E-112/E-911 is Coming...

- From ~2006 **all** mobile phone emergency calls will include positioning as part of E-112/E-911
 - Emergency voice calls from **all** phones will go to the PSAP with location information
 - Dramatically reduces the value of separate voice-based vehicle service to provide position
- New intermediary to PSAPs may be a 'pre-help' service for language assistance, special medical situations, etc.
 - Useful from any phone (wired, wireless, internet)
 - Any phone could be set to autodial this service
 - Could be operated by auto clubs, insurance providers, communications carriers, etc.

In-Vehicle Considerations



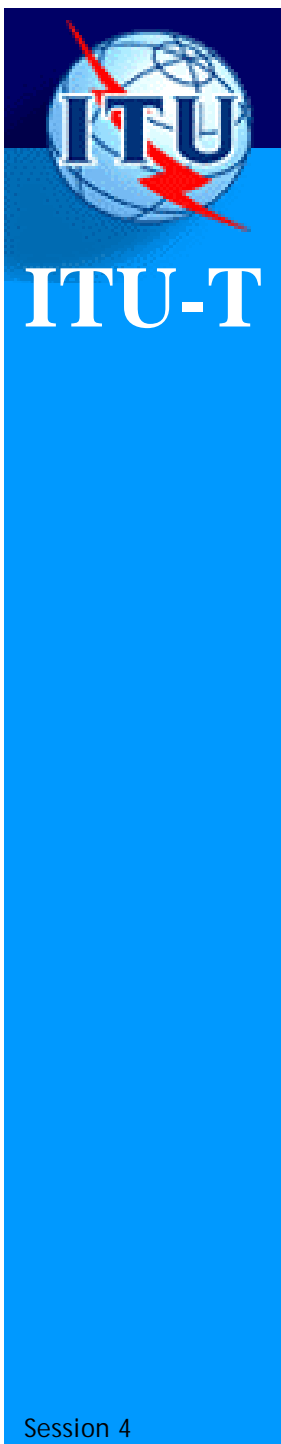
- Some vehicle manufacturers will provide a 'manual' SOS button in the vehicle
 - Initiates a voice E-112/E-911 call from all capable phones in the vehicle
 - Possible option: Allow the vehicle manufacturer or owner to set the SOS button to dial a pre-help service
 - Mobile phones may include such a capability
- Some vehicle manufacturers will trigger a voice E-112/E-911 call or a pre-help service call via all capable phones in the vehicle when a crash is sensed
 - Function provided on a best-effort basis only – no assumption of liability for call completion

A separate, highly-reliable, crash-triggered service is also required to ensure that valuable data gets to a PSAP in the event of a crash

Automatic Crash Notification (ACN)

- A crash-initiated “SOS” function for vehicles is different from and in addition to initiating a voice E-112/E-911 call
- Requirements ...
 - A high-integrity operation that works for the service life of the vehicle
 - Very robust, embedded in-vehicle equipment
 - Since a regular mobile phone may not survive a crash
 - Messages are data-only, originated from the vehicle, and automatically triggered
 - Since vehicle occupants may be unable to talk or no longer in the vehicle after a crash

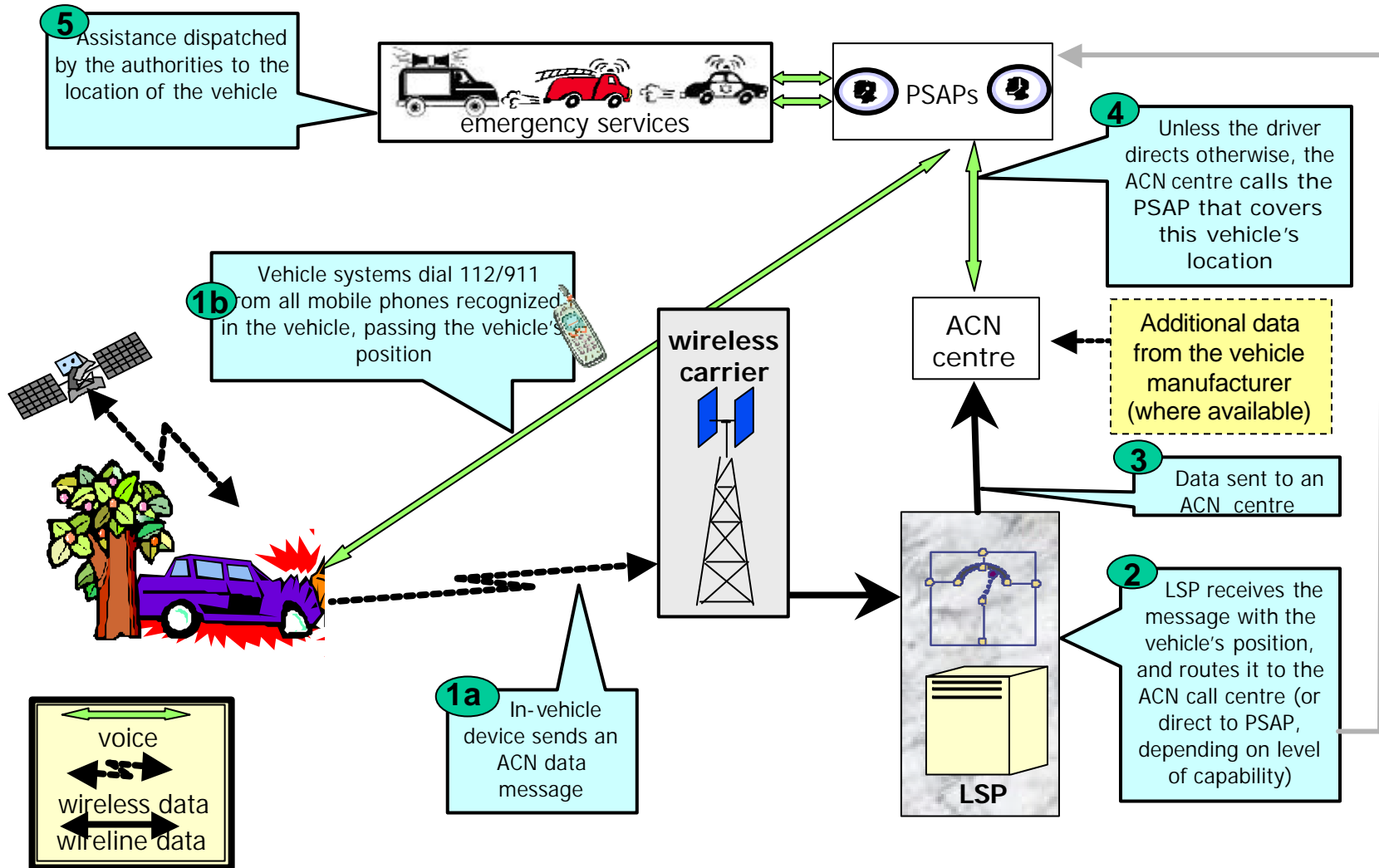
ACN will provide this automotive-grade function



How ACN Meets These Requirements...

- By sending a data message automatically from a vehicle when a crash is sensed (e.g. airbag deploys)
 - In addition to location, the data message can contain information about the crash and the vehicle's occupants
 - Receipt of this information by the PSAP should reduce the arrival time of the right emergency services with the right equipment to deal with the precise crash situation
- By being robust and crash tolerant
- By working reliably for the service life of the vehicle, independent of other vehicle capabilities

E-112 with ACN Added



PSAP Perspective

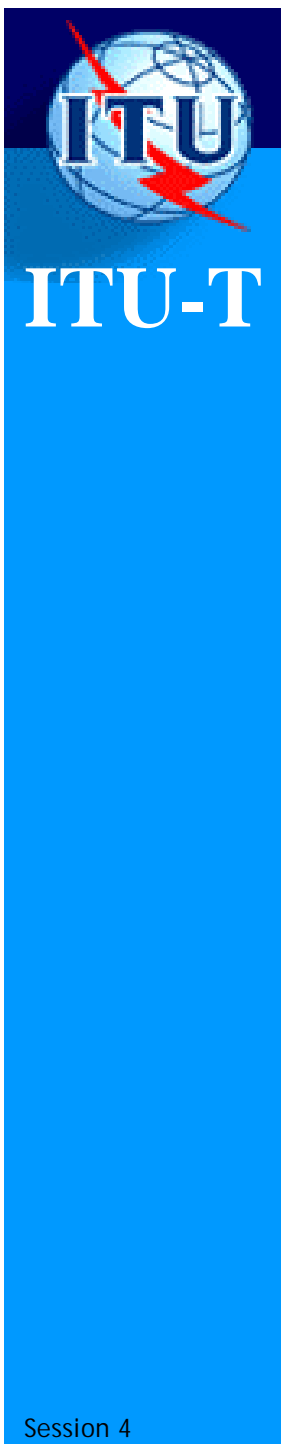


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- o Current considerations ...
 - Many PSAPs will have challenges for years handling location with mobile E-112/E-911 calls
 - PSAPs are now having to find ways to locate calls made from internet voice over IP (VoIP) services
 - To ease the load on PSAPs, ACN messages can be
 - Automatically interpreted and displayed at an ACN centre supported by the vehicle manufacturers
 - Relayed by voice to the appropriate PSAP
 - For countries with advanced PSAP structures, the ACN data message can go directly to the PSAP
- o Information about the crash and the vehicle may also be made available to PSAPs on a secure internet site

Future ACN Approaches

- Future ACN implementations could provide supplementary information on crash characteristics from onboard sensors
- Additional data messages may be sent as more data about the crash is available
- Some vehicle manufacturers may also send pre-crash data, to help evaluate
 - The type and severity of the crash
 - Performance of in-vehicle systems, especially as more complex, software-based safety systems appear in high-end vehicles
- Privacy and data ownership and use rules, which are complex and vary by country, must be addressed



Thank you for your attention

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