



and partners

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European eCall Trial – The way forward to Multiservice Platforms



Telematics addresses key challenges of today's society



**Ensure
safety**

Emergency Call



**Enhance
mobility**

Intelligent Traffic Management



Environmental care

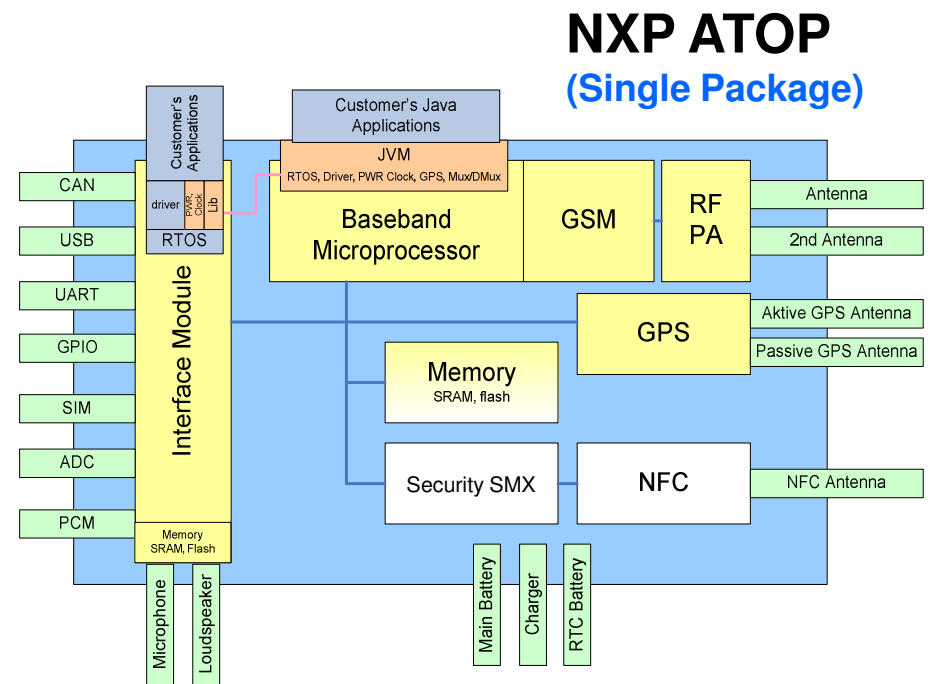
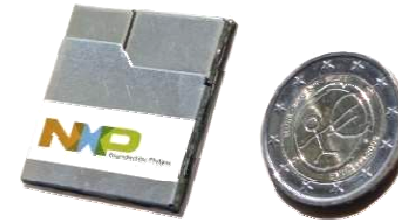


**Energy Mgmt.
& Billing**

**Hybrid-/
Electric Vehicles**

eCall – NXP ATOP enables mass-deployment

- ▶ Small form factor and low cost
- ▶ Automotive grade
- ▶ Easy programmability reduces time-to-market and enables additional value-add services on Car2Infrastructure:
 - Intelligent traffic management
 - Stolen vehicle tracking
 - Remote diagnostics
 - Location based services: hotels, restaurants
- ▶ Security to safeguard privacy, protect content, prevent manipulation



NXP and partners are pleased to announce...

... the successful completion of the European eCall Trial

- ▶ Three cars started Nov 10th from Madrid, Athens, and Helsinki to converge at the eSafety Forum in Brussels Nov 25th 2010
- ▶ 16 countries covered
- ▶ BMW, IBM, Allianz & NXP backends received 15000 eCalls (50% inband modem; 50% SMS based)
- ▶ NXP ATOP has proven independent switching of standards at national borders (inband vs. SMS)

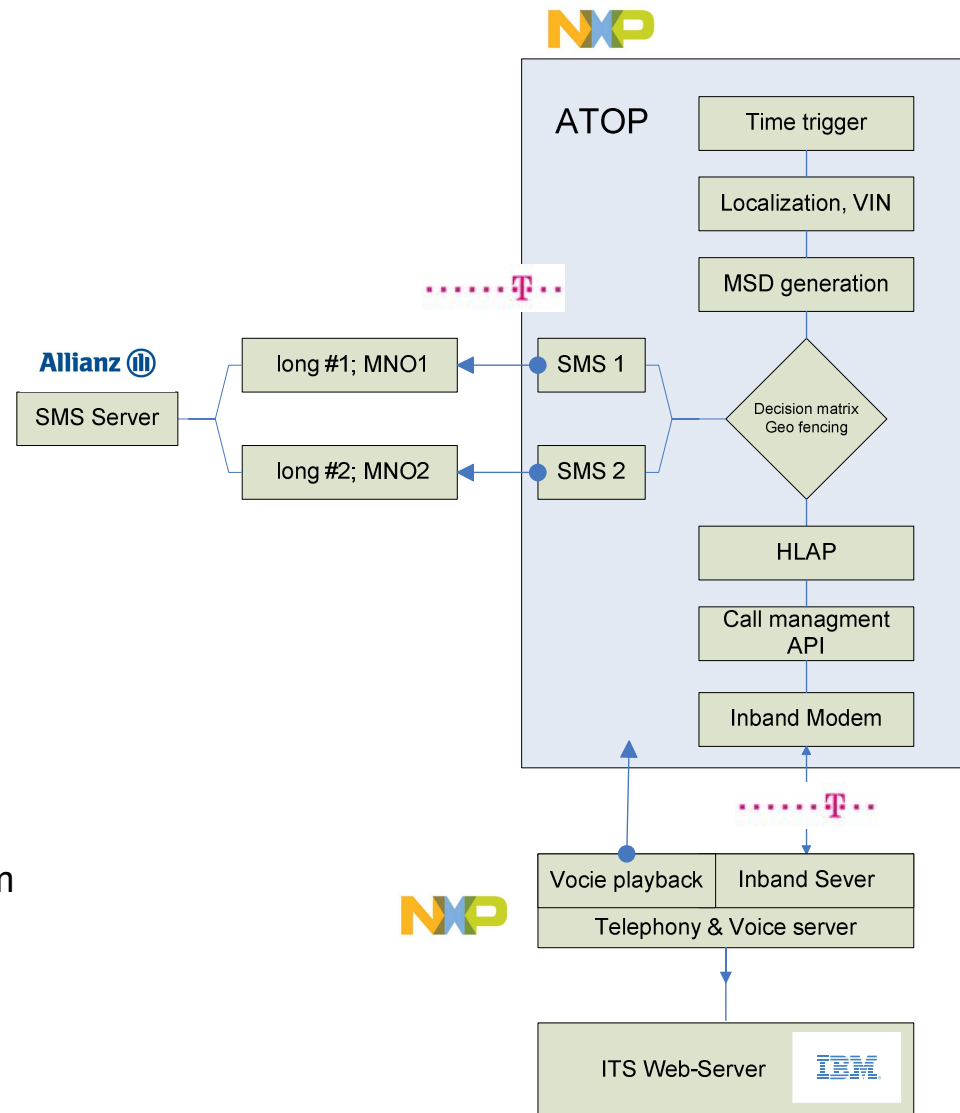


**The collected eCall data has been analyzed
and will be used for a successful launch
of the HeERO Trial in January!**



Call Process

- ▶ Time trigger @ ~5min (remote configurable)
- ▶ MSD* Generation with GPS based time, GPS coordinates, Fix defined VIN, aux. data
- ▶ Trigger of 2 SMS containing MSD
 - SMS to MNO 1 gateway
 - SMS to MNO 2 gateway
 - Reception @ Allianz Server
- ▶ Call management
 - HLAP @ call open
 - Pilot tone
 - Inband modem
 - Reception on Linux based inband modem server @ ISDN fixed line
 - MSD decoding
 - Voice prompt
- ▶ GPS position display @ IBM ITS server



*MSD in accordance to CEN standards

eCall Field Trial Results

15,000 eCalls processed during field trial

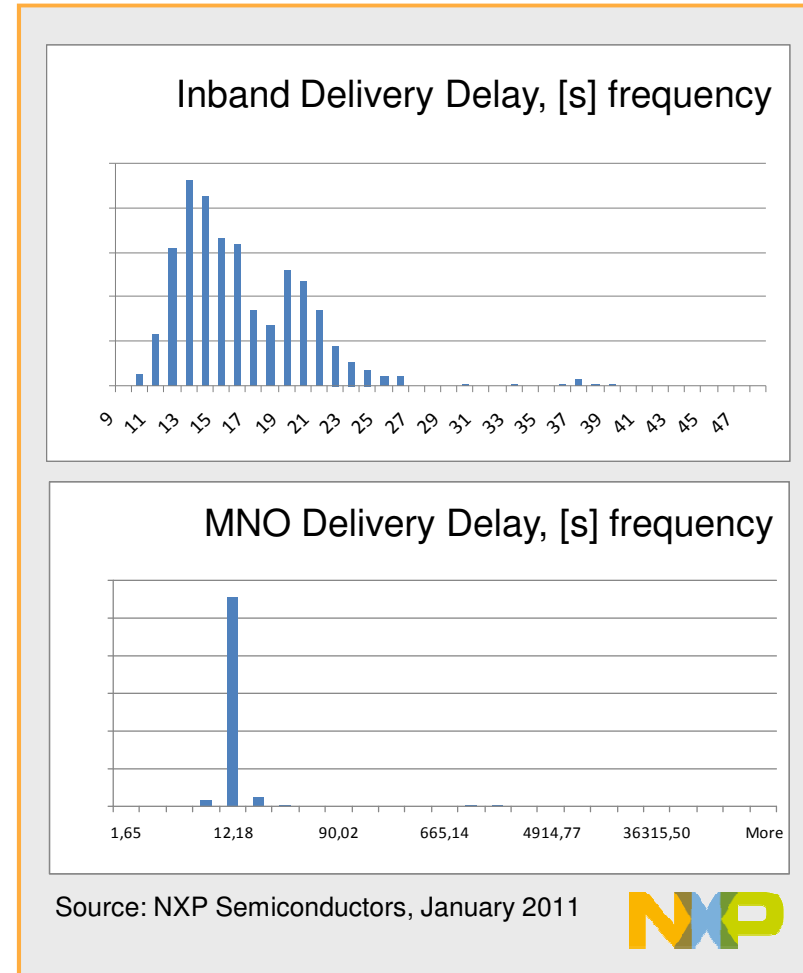
- 50% Inband modem based
- 50% SMS based

Inband modem

- ▶ Quantitative results
 - Delivery time average: ~13s
 - Variance: ~52s
 - Successful delivery rate: 70%-75%
- ▶ Qualitative observations:
 - At good reception conditions
 - Fast delivery (first pass)
 - Low loss rate

SMS based

- ▶ Quantitative results
 - Delivery time average: ~12s
 - Variance: ~10s
 - Successful delivery rate: 96%-98%*
- ▶ Qualitative observations:
 - Works under low signal level conditions



Summary, Conclusion & Outlook

Summary

- ▶ Improved inband modem results compared to earlier revisions
 - New inband revision released by Qualcomm / March 2011
 - Latest Inband modem revision implemented and under test
- ▶ At weak GSM field strengths, inband modem results deteriorate → improvements visible
- ▶ HLAP (high-level application protocol) does improve reception ratio at cost of longer transmission times

Conclusion

- ▶ The trial has shown a successful combination of existing SMS-based Automatic Crash Notification Systems with European Inband modem standard for pan EU eCall
- ▶ Today's systems generally allow switching between both implementations (fully software defined)
- ▶ Inband modem is maturing. Field test are mandatory for validation and optimal performance.
- ▶ Technical limits using GSM audio channel for data transmission can not be overcome by inband modem use.

Outlook

- ▶ Use of E112 and eCall flag can further help to minimize weak GSM field condition
- ▶ HeERO field trial will support further maturation and full end 2 end testing
- ▶ Test of multi service test conditions



European eCall Implementation and Demonstration Workshop

Further info at www.nxp.com/eCall

