

# Czech electronic toll collection – two and half years of experiences.

Prague, 15th October, 2009

**Ing. Karel Feix**

General Director



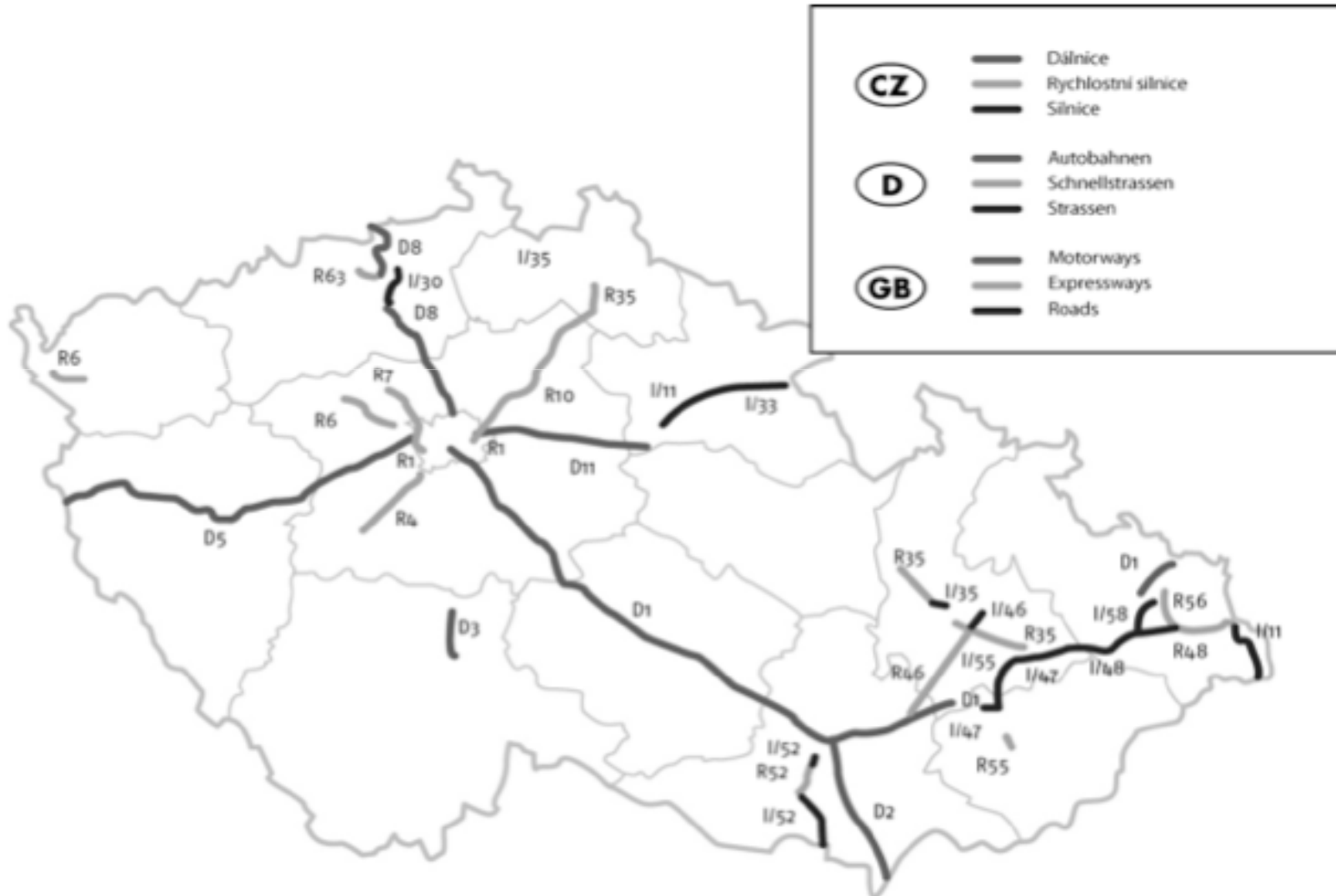
## Basic facts about Czech ETC.

- Toll for vehicles **over 12 tons** maximum gross weight.
  - vehicle categories (axles and emission class).
  - from January 2010 the toll obligation will enlarge to vehicles over 3,5 tons weight.
- **Actually about 1200 km of tolled roads** in the operation.
  - Operation of about 970 km highways and motorways (1st Phase) from 1st January 2007.
  - Operation of about 180 km 1st class roads (2nd Phase) from 1st January 2008.
  - Newly completed highways and motorways.
- Open system architecture & **Multi Lane Free Flow** with compulsory OBU (On-Board-Unit).
- Deposit for OBU (prepay or post pay payment) approx. 57 EUR (1.550,- CZK).
- Average toll 0,16 EUR/km for H+M and 0,08 EUR/km for 1st class roads.
- The total performance of the Czech e-toll system is **about 99 %** (independent auditor). The transaction performance reaches over 99,7 %.

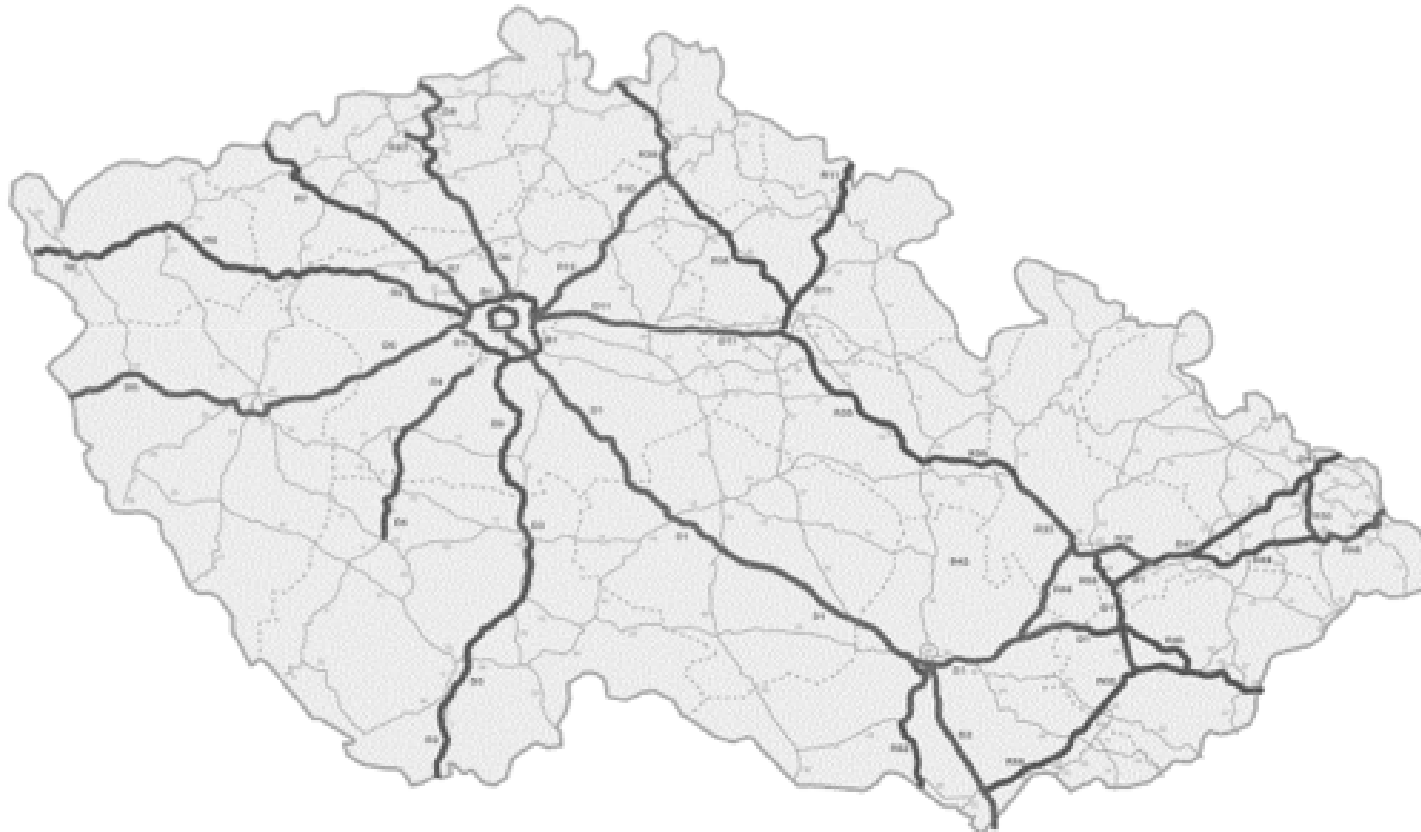
## Who is who in Czech ETC.

- **Buyer:** Czech Ministry of Transport (MD ČR)
- **Operator:** Czech Road and Motorway Directorate (ŘSD ČR)
- **Mobile Enforcement:** Czech Customs Administration (GŘC ČR)
- **Project Manager:** Consortium of Deloitte and Bovis
- **Independent Auditor:** LogicaCMG
- **General Contractor and operator of services of ETC:** Consortium Kapsch
  - Consortium Kapsch won the tender (2005) with microwave (DSRC) technology, with open system architecture within and Multi Lane Free Flow System, with mandatory OBU.
  - System implemented only within 9 (!) months which is international recognized world record! Operation started on January 1, 2007 for heavy vehicles with a maximum permissible lade weight of 12 tons and above.
  - Kapsch provides the complete operation services for the Czech Republic since January 2007. The total length of contract is 10 years.

**Tollable road network by January 1st, 2009.**



**Tollable Highways and Motorways by 2013 – 2015 with DSRC.**



**Tolled highways and motorways since 1.1.2007**      **—————**  
**Tollable highways and motorways by 2013 – 2015**      **—————**



## Facts & Figures of the first 2,5 years of operation.

- In 2007, the first year of operation, was earned **EUR 213 mio.** In 2008, the second year of operation, the collected toll footed up to **EUR 245 mio.** in total.
- For 33 months of operation was earned **EUR 632 mio.** in total !
- By the September 2009, almost 420.000 active OBUs, are registered in the system - even 3 times more the highest expectations!
- The revenue in 2009 is about 10 % lower in comparison with 2008, and is the same like in 2007. The estimation of the total revenue in actual year is **EUR 207 mio.**

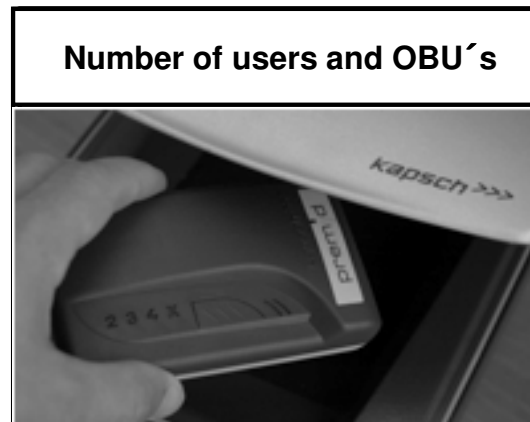
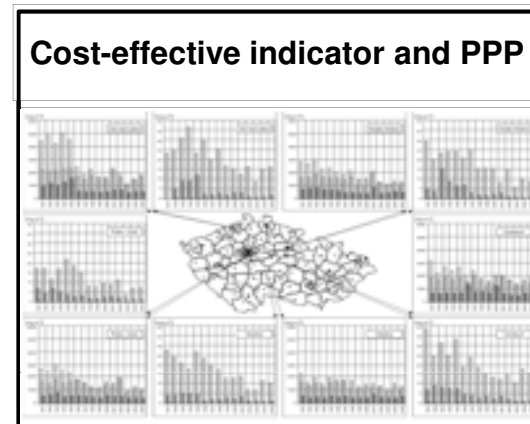
Week	2008	2009	Index	Change 2008-2009		2007	2009	Index	Change 2007-2009
29	119 789 285	106 598 076	88,99%	-11,01%		110 835 803	106 598 076	96,18%	-3,82%
30	116 450 928	104 292 156	89,56%	-10,44%		107 220 943	104 292 156	97,27%	-2,73%
31	109 326 943	104 546 408	95,63%	-4,37%		99 147 931	104 546 408	105,44%	5,44%
32	103 952 508	103 635 861	99,70%	-0,30%		97 401 416	103 635 861	106,40%	6,40%
33	109 159 141	105 648 126	96,78%	-3,22%		102 829 030	105 648 126	102,74%	2,74%
34	114 169 873	108 780 525	95,28%	-4,72%		106 681 294	108 780 525	101,97%	1,97%
35	118 942 014	114 674 371	96,41%	-3,59%		110 488 401	114 674 371	103,79%	3,79%
36	123 090 798	117 506 222	95,46%	-4,54%		114 510 119	117 506 222	102,62%	2,62%
37	127 594 482	121 032 624	94,86%	-5,14%		116 254 795	121 032 624	104,11%	4,11%
38	125 923 523	117 735 357	93,50%	-6,50%		118 985 368	117 735 357	98,95%	-1,05%
39	127 528 525	119 215 010	93,48%	-6,52%		110 541 037	119 215 010	107,85%	7,85%

Source: Czech toll project MYTO CZ

# **Czech electronic toll operation - two and half years of experiences.**



# Electronic tool operation experiences.





## Toll system extension

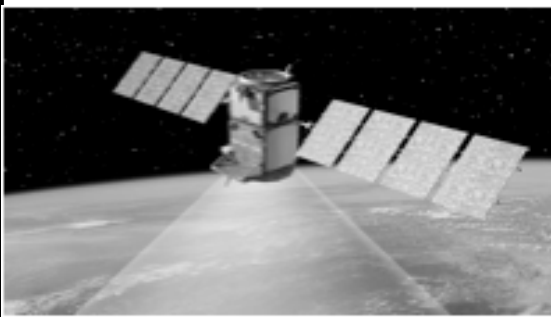
**Toll collection for vehicles above 3.5 tonnes**



**Electronic coupons for time-based fee for personal cars**



**Hybrid tolling solution for low class roads**



**Transport safety and telematics**



## **Toll collection for vehicles above 3.5 tonnes.**

- **Czech Parliament decided to extend electronic toll collection for all vehicles above 3.5 tonnes from January 2010.**
- Kapsch makes the necessary adaptations to the existing Czech Electronic Toll System and prepares the OBU's.
- Tolling duty for all lorries is rightful and common in whole Europe (except Germany), e.g. in neighbouring Austria or prepared one in Slovakia.
- The extension of toll to all trucks is agreeable also for the largest domestic association of road transport operators CESMAD BOHEMIA.
- Czech MoT together with experts from CVUT chose an option which is counting with the same tariff conditions like for heavier trucks.
- **With operation until 2017 accrued profit of 3,5 ton ´s trucks is going to work out EUR 769 mio = profitable project.**

## Electronic coupons for time-based fee for personal cars.

- From January 2011, the Czech Parliament decided to replace existing „paper“ vignette by **anonymous** electronic boxes to maximal usage of existing toll system.
- In Czech republic, time fee for highways usage is paid by personal cars. In future system will be switch to personal cars toll collection.
- The electronic vignette will communicate with the existing tolling infrastructure (e.g. information about traffic flow density to prevent accidents and congestions, electronic enforcement of non-payers).
- Only DSRC technology enable to charge personal cars on highways (low operation costs, OBU purchase price).

## Transport safety and telematics.

- The Czech electronic toll system from Kapsch provides an ideal infrastructure for implementing a broad spectrum of traffic telematic solutions starting from capturing traffic data for traffic management and planning, applications for improving safety & security, mobility services for improving comfort for the road user, to solutions for various industries like fleet tracking or pay-as-you-drive car insurance.
- **Toll system for transport safety:**
  - Implementation of the Traffic Management System for the Czech most used highway D1 in section 0 – 246,8 km of the D1 highway by means of using existing System.
  - Connection to NTIC (National traffic information center) – electronic toll collection system data are the main source of indications, besides police, IZS, meteorologists information, traffic reports and road infrastructure.
  - The second phase of the Traffic Management System (information panels + travel times system) will be implemented in highways D2 and D5 by the end of 2009 and during 2010.

## Hybrid tolling solution for low class roads.

Kapsch System Concept shows how a future national road pricing system could be implemented for more roads and all heavy vehicles:

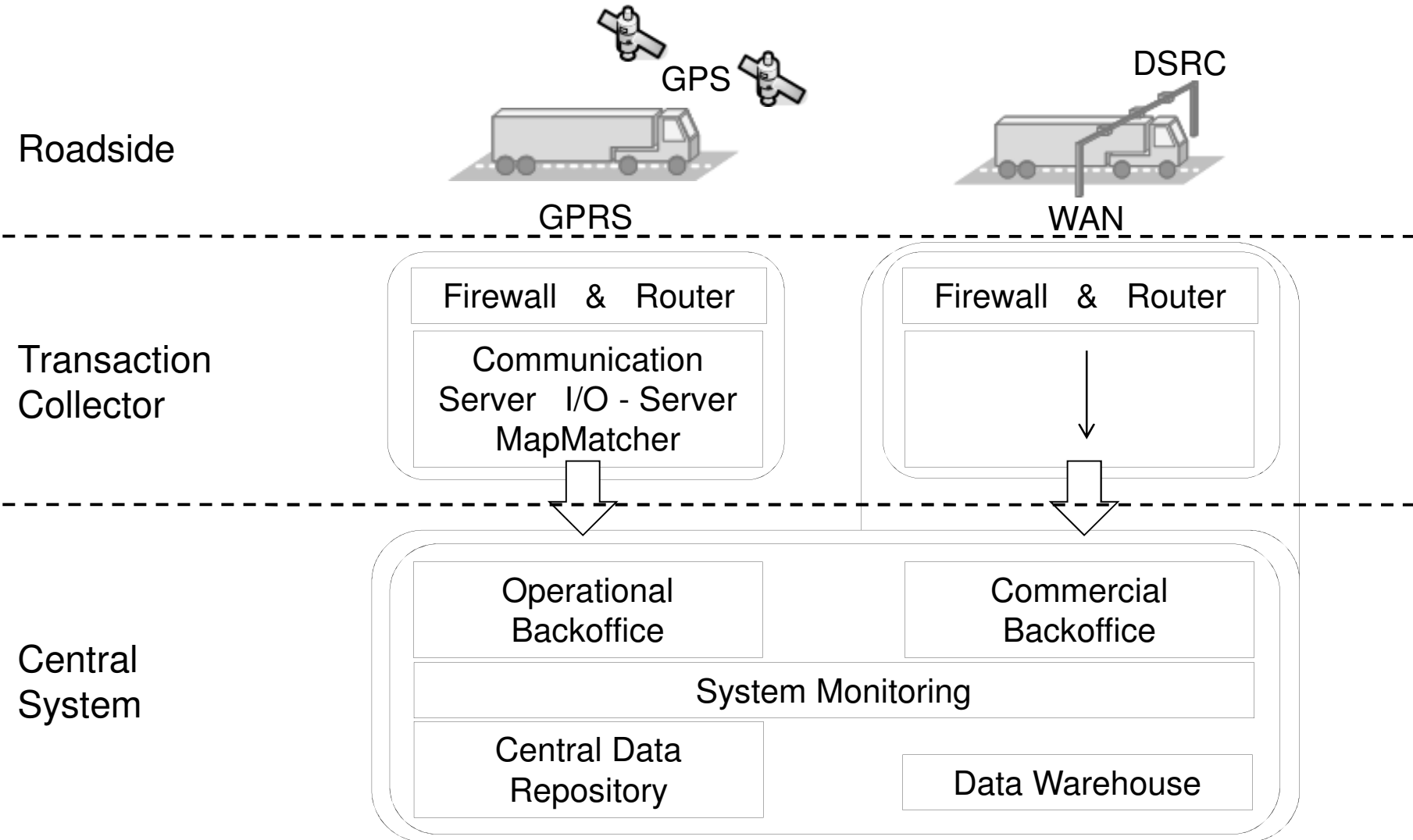
- DSRC for motorways and other main roads (current solution)
- GPS/GPRS for rural roads (Trial)
- DSRC/Video charging for urban areas or specific charging zones (Parking)



GPS/DSRC on-board unit

3 system parts fully compatible: enable the system planners to choose the best technology for each specific use case

# Kapsch Area / System overview



## Kapsch Area / Czech Trial

- Update of 1.000 selected OBUs (TO2) within 24 hours
- 43.700.000 matched segments / month
- Matching result >99%
- No problem with coated windscreen
  
- Time from data entry to matching result <40 seconds
- Personalisation with virtual and real licence plates
- Segments defined on basis TeleAtlas
- Special segments can be redesigned by Kapsch
- No roaming

**Thank you.**

**Ing. Karel Feix**

General Director

**Kapsch Telematic Services**  
Ke Štvanici 656/3 | CZ-186 00 Praha 8  
Czech Republic  
karel.feix@kapsch.net

**Please Note:**

The content of this presentation is the intellectual property of Kapsch TrafficCom AG and all rights are reserved with respect to the copying, reproduction, alteration, utilization, disclosure or transfer of such content to third parties. The foregoing is strictly prohibited without the prior written authorization of Kapsch TrafficCom AG. Product and company names may be registered brand names or protected trademarks of third parties and are only used herein for the sake of clarification and to the advantage of the respective legal owner without the intention of infringing proprietary rights.