1st Institutional Investors’ Day.
Peter Ummenhofer: Solution Portfolio.
January 11, 2017
Agenda.

1. Solution Portfolio.

2. Solution Center
   “Intelligent Mobility Services”.
Solution Portfolio.
Our portfolio.

Intelligent Mobility & Data Services

- **Tolling**
  - Electronic Toll Collection
  - City Tolling
  - Plaza Tolling

- **Traffic Management**
  - Highway Traffic Management
  - Managed Lanes
  - Tunnels & Bridges Traffic Management

- **Smart Urban Mobility**
  - Smart Parking
  - Urban Traffic Management
  - Integrated Mobility Management

- **Safety & Security**
  - Road Safety Enforcement
  - Commercial Vehicle Enforcement
  - Electronic Vehicle Registration

- **Connected Cars**
  - V2X Automotive
  - V2X Infrastructure
  - Connected Services

Platforms & Products
Tolling solutions.

What we do

- ETC solution provider

Offering:

- In-vehicle Products
- Field Equipment
- Back Office
- System Integration
- Technical & Commercial Operations
- Project Financing

Highlights

- Pioneer in ETC solutions (start of activities in the mid 80s)
- #1 ETC Solutions Provider globally¹
- Core technologies and products produced in-house
- Multi-technology approach

¹ Ptolemus, ETC Global Study 2025, 2015
Applications.

Multi-Lane Free-Flow Tolling
- All type of roads: mainly highways, expressways and other main roads
- All type of vehicles: e.g. HGVs, all vehicles
- DSRC* and/or ANPR; Managed lanes

Satellite Tolling
- All type of roads from highways to rural roads
- All type of vehicles: e.g. HGVs, all vehicles
- GNSS, GSM, GPRS

Mobile Tolling
- All types of roads: mainly highways, expressways and other main roads
- All types of vehicles: e.g. HGVs, light vehicles
- Adding smartphones as a new tolling product apart from DSRC* and/or ANPR; Video correlation

eVignette
- All type of roads, mainly on high category roads, highways
- Light vehicles
- ANPR

City Tolling
- Urban areas
- All type of vehicles
- ANPR, DSRC*, GNSS, but mainly ANPR based

Plaza Tolling
- Concessions toll roads, high category roads, bridges and tunnels
- All type of vehicles
- DSRC* and/or ANPR
Traffic management solutions.

What we do

- ATMS solution provider
- Offering:
  - Back Office DYNAC®
  - Field Equipment (3rd party)
  - System Integration
  - Technical Operation

Highlights

- DYNAC® = world-class ATMS solution
- 35y+ experience in design, build & maintenance of mission critical automation applications
- Impressive references
- V2X enabled
Applications.

Highway Traffic Management

- Network management
- Section management
- Node and object management
- Traffic information

Managed Lanes

- Managed lane systems
- High occupancy tolling
- Peak-hour pricing, toll adjusted to average speed or capacity

Tunnel & Bridges Traffic Management

- Multi domain SCADA as umbrella system
- System surveillance
- Emergency response plans
- Reversible lanes
- IDS pre-integration
Smart urban mobility solutions.

What we do

Vendor of selected urban mobility solutions

Offering:

- Back Offices (EcoTrafiX, Streetline)
- Traffic Light Controllers
- Parking Sensors
- System Integration
- Technical Operations

Highlights

> Modern urban traffic management suite
> Impressive urban references
> Pioneer in Smart Parking
Applications.

Smart Parking
- Smartphone based user guidance*
- Parking availability inference via data analytics and IoT
- City parking management and enforcement apps
  * enabled by Streetline

Urban Traffic Management
- EcoTrafiX™ traffic management software for city
- Advanced event management tools
- Data Analysis and Data Mart

Integrated Mobility Management
- Integrated Corridor Management
- Integrated Mobility Platforms
Streetline™ – smart parking.

How it works.

1- Space occupancy is detected in real-time via Sensing Devices (magnetic or video)

2- Motorist is guided to available parking spaces via Mobile App and by dynamic message signs

3- Motorist parks

4- Motorist Activates timer & makes Mobile Payments

5- Enforcement is guided to violations in real time via Directed Enforcement

6- Consultants receive analytics for policy recommendations and continuous client engagement via Parking Analytics Platform

Or pay by meter
Streetline™ – smart parking.

Building blocks.

Streetline Hybrid Smart Parking Platform

Streetline street-level sensors
Streetline Camera
Streetline ParkingData (APIs & SDK)
Streetline Guided Enforcement

Streetline™ Smart Parking

Parker™ Real-time parking guidance app
ParkEdge™ – Off Street Management
ParkSight Analytics™
ParkerMap – Merchant Web Tool
USA
Smart Parking for Los Angeles

Los Angeles, CA – Sensor Based Scalability

- LA Express Park™
- Installation of 7,000+ spaces throughout downtown, Hollywood and Venice
- Parker
- Guided Enforcement
- Parking Status API
- Demand-Based Pricing
- ParkEdge
- Client Services Analytics
- Guidance of drivers to open parking spaces
- Informing drivers about policy and pricing for each block

Innovative parking management strategy
2008 - Present
Real-Time Parking Data

Weekday Turnover: + 59% (car/space/hour)
Higher Capture Rate: -27% of time limit violations
Enforcement efficiency: +87% traffic citation revenue
EcoTrafiX™ – urban traffic management.

How it works.
EcoTrafiX™ – urban traffic management.

Building blocks.

EcoTrafiX™ Suite

EcoTrafiX™ Controller

EcoTrafiX™ Software Suite

EcoTrafiX™ Command

EcoTrafiX™ Expert

EcoTrafiX™ Mobility

Urban Traffic Management

Services

www.kapsch.net
EcoTrafiX™ – urban traffic management.

Key reference.

USA
The US-75 ICM Project, Dallas, Texas.

US-75 Integrated Corridor Management, Dallas, Texas

- Comprehensive EcoTrafiX™ solution for global corridor-wide transportation operations
- Multi-agency collaboration
- Multi-modal traveler information
- Set-up a shared and collaborative map-based system
- Implementation of global and multi-modal traffic improvement strategies
- Increasing the corridor throughput
- Improving the travel time reliability and incident management

3% Improvement in Travel Time Reliability
740,000 Person-Hours of Travel Time Savings p.a.
28-mile US-75 corridor from downtown Dallas, north to SH 121

12 surrounding cities within the Dallas-Fort Worth region
10-Year Net Benefit of $264M (or Benefit-Cost Ratio of 20:1)
More than 220,000 passenger per day

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740,000 Person-Hours of Travel Time Savings p.a.
28-mile US-75 corridor from downtown Dallas, north to SH 121

12 surrounding cities within the Dallas-Fort Worth region
10-Year Net Benefit of $264M (or Benefit-Cost Ratio of 20:1)
More than 220,000 passenger per day
Safety and security solutions.

What we do

- Vendor of selected safety & security solutions
- Offering:
  - Enforcement Back Office
  - Enforcement Field Equipment
  - Back Office
  - System Integration
  - Technical & Commercial Operations

Highlights

- Portfolio of selected enforcement solutions
- Market leader in South Africa in Road Safety Enforcement
- High performance solutions for commercial vehicle enforcement
Applications.

- **Road Safety Enforcement**: Facilitating the enforcement of motoring and traffic laws.
- **Commercial Vehicle Enforcement**: Credential & safety enforcement, Ensuring carrier compliance with laws and regulations.
- **Weigh-in-Motion**: High-speed weight measurement, Vehicle preselection for checkpoints, Bridge protection, Traffic statistics solutions and/or Enforcement.
- **Electronic Vehicle Registration**: Centralized management of vehicle registration data, Automated monitoring for registration compliance.
What we do

- Envisioned vendor of V2X In-Vehicle equipment to the Automotive Industry
- Vendor of V2X infrastructure solutions
- Envisioned vendor of selected connected cars services
- Offering:
  - In-vehicle Products
  - RF-Field Products
  - V2X-enabled ATMS Back Office

Highlights

- Forerunner in V2X technology
- Participant in V2X “light-house” projects (e.g. European Corridor Project, Platooning Trails)
- Very active in standardization (e.g. ETSI)
- Member of the Car-2-Car Communication Consortium
Applications.

V2X Automotive / In-Vehicle Products
- Evaluation Kit EVK-3300 for automotive entry up to A-prototype
- ITS G5 / WAVE communication stack

V2X Infrastructure / Roadside Products
- Roadside unit for pilot projects:
  - V2X enabled traffic management on highways
  - Urban V2X infrastructure for smart city solutions
- ITS G5 / WAVE communication stack

Connected Car Services
- Envisioned services for the automotive industry (e.g. tolling, parking etc.)
Solution Center: Intelligent Mobility Services.
## Solution Center IMS: Overview.

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<td>✔ Establish IMS services business (Strategy 2020)</td>
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<td>✔ Leverage on new mobility trends (e.g. connected cars, multi-modal mobility)</td>
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<td>✔ Tolling services</td>
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<td>✔ Multi-modal mobility services</td>
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<th>Organization</th>
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<td>✔ Dedicated division (“Solution Center”)</td>
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<td>✔ 2 start ups functioning as “launch pads” (tolltickets, FluidTime)</td>
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<td>✔ Service portfolio strategy</td>
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<td>✔ Services definition &amp; go-to-market planning</td>
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<td>✔ Marketing &amp; business development</td>
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<td>✔ Portfolio sourcing &amp; development</td>
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<td>✔ Partner management</td>
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<td>✔ Services operations</td>
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Strategy: Enable intelligent mobility services.
Tolling services.

Facts & Figures
- Headquarter: Rosenheim, Germany
- Founded in 2007
- Ownership: 65% Kapsch TrafficCom, 35% CEO
- 20 employees

Portfolio and business model
- Tolling services for private users (vignettes and distance tolls) in Europe
- White labelled toll services for fuel card issuers and other HGV services providers in Europe

References
- Trafineo (BP, ENI, Statoil)
- DKV
- OMV
Multi-modal mobility services.

Facts & Figures
- Headquarter: Vienna, Austria
- Ownership: 75% Kapsch TrafficCom, 25% CEO
- 20 employees

Portfolio and business model
- Integrated Mobility platforms
- System provision, integration and technical operation
- White-labeled multi-modal mobility services (planned)

References & Awards
- SMILE (Vienna)
- Qando (Vienna, Linz, Salzburg, Klagenfurt, Graz)
- Bonvoyage (Horizon 2020; Bilbao, Oslo, Rome)
- UITP Award (Category: Customer Experience)
- Staatspreis Mobilität (Austria)
Thank you for your attention.

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