Smart Cities

2017 Joint Meeting
CO / WY ITE • ITS Rocky Mountain
Greater Denver Area • Oct. 5th-6th, 2017
What is a Smart City?

A Smart City can be defined as a community which employs information and communications technology (ICT) to efficiently manage its assets.
Elements of a Smart City
Intelligent transportation systems and solutions are part of this overall ICT deployment, allowing a community’s transportation professionals to manage the flow of traffic as efficiently as possible through effective use of the deployed solutions.
Transportation in a Smart City
Smart City Concept

INTERNET OF THINGS IN CONNECTED CITIES

Every consumer product and piece of infrastructure increasingly has the ability to sense surrounding stimuli, to communicate with other devices and people, and to draw on the power of the cloud. This phenomenon has been dubbed the Internet of things. The more smart devices and sharing platforms there are, the more data is generated about consumer preferences and habits. But what does this mean for cities? Smart cities are employing the same technology to help with sustainability initiatives, public service grids, generating real-time aggregate data. This, in turn, can help cities manage their programs and services more effectively and gauge their impact immediately. The city of the future is an interconnected one, where devices communicate with one another and share data that provides real-time information to the public and to the municipality.
Smart City Concept

SMART CITY COMPONENTS
What is a Smart City?

The goal of this ICT technology is to efficiently deliver services to the city’s residents, thereby improving quality of life.
Transportation in a Smart City
Kapsch in a Smart City

- TOLLING (ETC)
- HIGHWAY/MANAGED LANES
- TRAFFIC MANAGEMENT (ITS)
- URBAN TRAFFIC MANAGEMENT (IMS)
- CORRIDOR MANAGEMENT (IMS)
- SAFETY & SECURITY
- TRAIN
- BUS
- TUNNEL (ITS)
- BRIDGE
- PARKING
- PUBLIC TRANSPORT
- CONGESTION CHARGING
- TRAFFIC LIGHT CONTROL (ITS)
- URBAN ACCESS
- CONNECTED VEHICLES
- DATA
- HIGHWAY/MANAGED LANES
- TRAFFIC MANAGEMENT (ITS)
**Kapsch in a Smart City**

<table>
<thead>
<tr>
<th><strong>Tolling (ETC)</strong></th>
<th><strong>Highway Traffic Management</strong></th>
<th><strong>Urban Traffic &amp; Mobility Management</strong></th>
<th><strong>Back Office Services (BOS / CSC)</strong></th>
<th><strong>Intelligent Mobility Services</strong></th>
<th><strong>Connected Cars (V2X)</strong></th>
<th><strong>KTC Services</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; E2E tolling roadside systems and fully managed lanes, including detection and single gantry products and design, advanced host features (trip-building &amp; dynamic pricing), and onboard units</td>
<td>&gt; DYNAC Automatic Traffic Management System (ATMS)</td>
<td>&gt; Products for “Smart City” development comprising traffic, parking, transit, process automation (EcoTrafiX, Streetline, FluidTime)</td>
<td>&gt; Kapsch offers an integrated, multi-tenant back office</td>
<td>&gt; Services for integrated mobility including Mobile Tolling</td>
<td>&gt; Kapsch is a leader in V2X technology, and in the V2X / Connected Vehicles industry</td>
<td>&gt; Kapsch offers ITS consulting services to federal, state, local agencies</td>
</tr>
<tr>
<td></td>
<td>&gt; EcoTrafiX integrated corridor management</td>
<td></td>
<td>&gt; Kapsch Phoenix BOS integrates with mobile ticketing and mobile tolling</td>
<td>&gt; Kapsch offers a full Commercial Vehicle Enforcement product suite with weigh-in-motion</td>
<td></td>
<td>&gt; Kapsch offers operational services of Traffic Management Centers (TMC) and Customer Service Centers (CSC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Includes OBO, CBO, EBO, IPS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Kapsch in a Smart City

Decision Support Sub-System:
- DSS Data Hub
- Rules Engine
- Evaluation Engines

Performance Measures:
- Performance Indicators
- Reports & Dashboards
- BI Tool

EcoTrafiX IEN:
- Alerts Mgmt.
- (4.2) Notifications Routing
- Video Sharing
- Context Awareness
- Incidents Mgmt

Data Hub:
- Fusion
- Winner Selection
- Validation
- Archiving

DataMart:
- WebServices
- Filters & Profiles

Caltrans D12 Systems:
- ATMS 6
- Transuite
- TMC PM
- DIAL
- CAD
- RIITS
- TAM CAL
- D8 C2C
- D11 C2C

Caltrans Regional:
- D7 C2C

Regional Partners Interfaces:
- City of Anaheim TMC
- OCTA
- 40+ Cities

Other Regional Information Provider:
- 511
- HERE
- DTN

External Services:
- Parking Management
- Mobility-On-Demand
- Connected Vehicles
- StreetLine
- Fluidtime
Thank you for your attention.

Jim Montgomery
Director | Sales and Business Development

Kapsch TrafficCom
Kapsch TrafficCom North America
4256 Hacienda Drive, Suite 100 | Pleasanton, CA 94588 | USA
T +1 925 225 1600 | F +1 925 225 1610
D +1 925 460 5531 | M +1 510 913 5148

jim.montgomery@kapsch.net
www.kapsch.net

Please Note:
The content of this presentation is the intellectual property of Kapsch 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 CarrierCom 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.