

# SIEMENS

*Ingenuity for life*

Smart systems. Smart traffic.

Siemens Intelligent Traffic Systems at a glance

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The world of mobility is facing tremendous challenges – we are facing *the next mobility revolution*

**SIEMENS**

## Trend



- Cities grow by two inhabitants per second
- Aging and individualism

**More and more people and goods need to be moved predominantly by rail and road.**

**Different modes of mobility will grow together.**

The world of mobility is facing tremendous challenges – we are facing *the next mobility revolution*



Trend

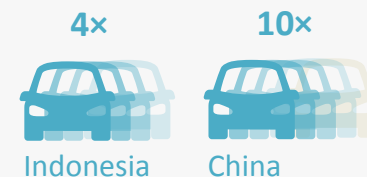
Increasing traffic leads to challenges for cities and urban regions in the areas of ...

**...mobility**

Average speed in big cities will drop further



2030  
Car density will increase ...



**...environment**

Road traffic accounts for **20%** of the total CO<sub>2</sub> emissions in the European Union



**...safety**

Major car accidents every ...

	Germany	United States	China
Major car accidents every ...	<b>49s</b>	<b>5s</b>	<b>0.6s</b>

Road deaths/100T & years

Road deaths/100T & years	<b>4.7</b>	<b>11.4</b>	<b>20.5</b>
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**...to be handled within tightened budgets**

Economic crisis in Europe biggest challenge for all major cities



## THE WORLD OF MOBILITY IS FACING TREMENDOUS CHALLENGES – WE ARE FACING THE NEXT MOBILITY REVOLUTION



- **More and more people and goods need to be moved predominantly by rail and road.**
- **Different modes of mobility will grow together.**
- Cities grow by two inhabitants per second
- Aging and individualism

## INCREASING TRAFFIC LEADS TO CHALLENGES FOR CITIES AND URBAN REGIONS IN THE AREAS OF ...



### ● mobility

2030  
Car density will increase ...



### ● environment

Road traffic accounts for **20%** of the total CO<sub>2</sub> emissions in the European Union

### ● safety

	Germany	United States	China
Major car accidents every ...	<b>49s</b>	<b>5s</b>	<b>0.6s</b>
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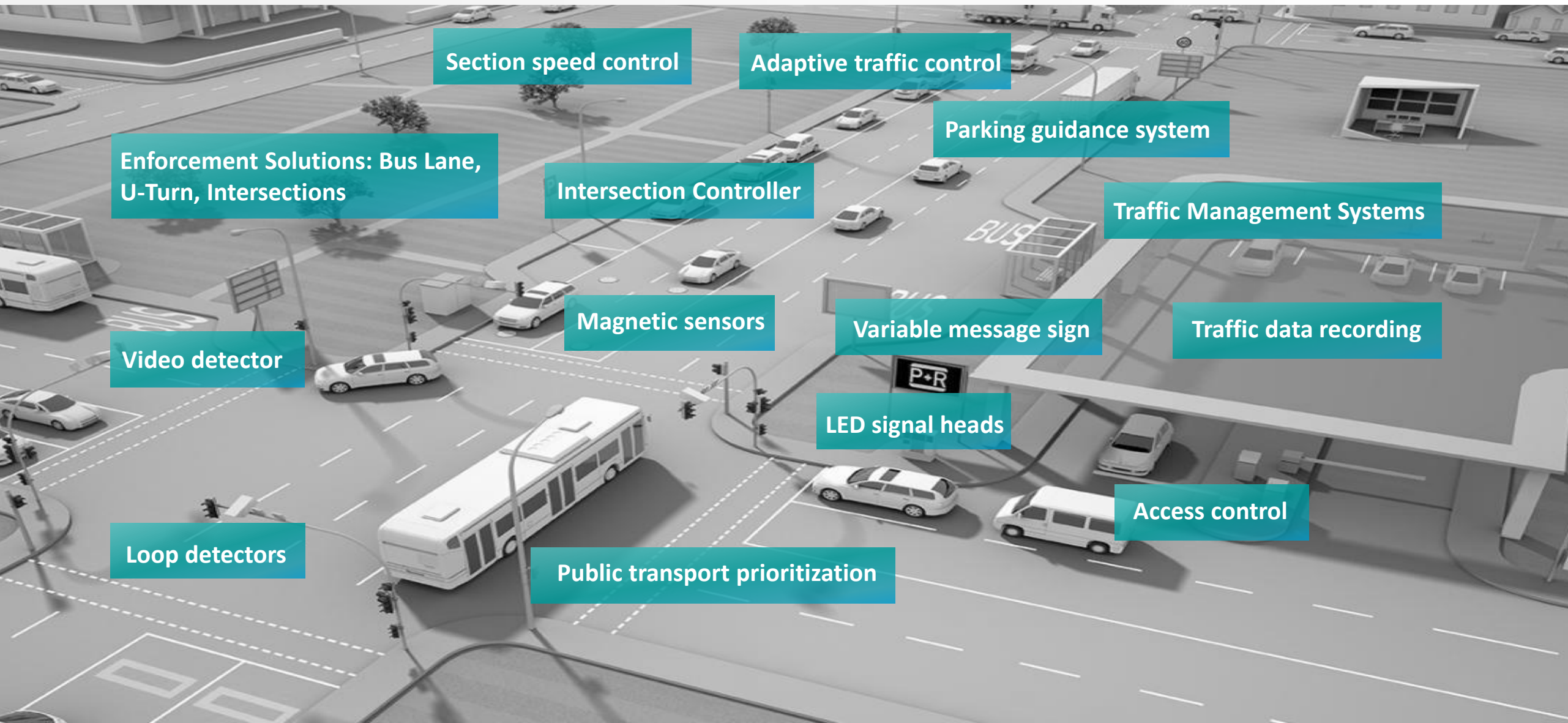
### ● to be handled within tightened budgets

Economic crisis in Europe biggest challenge for all major cities



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Section speed control

Adaptive traffic control

Parking guidance system

Enforcement Solutions: Bus Lane, U-Turn, Intersections

Intersection Controller

Traffic Management Systems

Video detector

Magnetic sensors

Variable message sign

Traffic data recording

Loop detectors

LED signal heads

Access control

Public transport prioritization

# Global ITS Product Portfolio

...we believe in managing traffic in a smart way



## CENTRALS



Scala, Concert, Guide



smartGuard



Stratos, UTC/SCOOT  
//UK



TACTICS, ACS lite, NextConnect  
//US



# Global ITS Product Portfolio

...we believe in managing traffic in a smart way



## CONTROLLER & SIGNALHEADS



Silux 2



sX & C900



smartCore



Office



Motion



ST950, Signals, UPS

//UK



ATC, SEMARC, SEPAC, 2070E

//US



# Global ITS Product Portfolio

...we believe in managing traffic in a smart way



## CONNECTED MOBILITY



SiBike



Stream



Detectors



ESCoS RSU & -CMS



SST5



# Global ITS Product Portfolio

...we believe in managing traffic in a smart way



**SERVICE,  
SOLUTIONS  
& FRIENDS**



Enforcement



Conduct+



Parking Solutions



Tunnel Mgmt



Intelligent Street Lighting



Customer Service



Training Center

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**CONTROLLER &  
SIGNALHEADS**



LED Signal head



Standard & advanced traffic controllers



Standard configuration tool

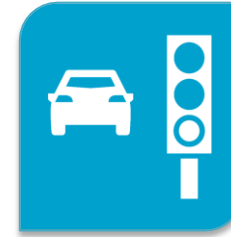


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**SIEMENS**



**CONTROLLER &  
SIGNALHEADS**



Advanced traffic engineering suite



Network traffic adaptive control methods



Standard & advanced traffic controllers



Standard configuration tool

## OUR CONTROLLERS AND SIGNALS MOVE THE WORLD



EASY-TO-USE



- Small intersections can be planned **within 30 minutes**
- For complex crossings we provide tools that allow transforming dreams to reality for any functional requirement

INTEROPERABILITY



- **All controllers are 100% compatible with Scala and the smartGuard system**
- Retrograde updateability for software or control configuration of the new sX controller without interruption of operation and the need to replace hardware

CONNECTIVITY



- The sX controller can be accessed via HTML5
- The sX can be enhanced by any external control method by simply connecting it to the controller **via the powerful Control interface.**

SITRAFFIC – SX

*Small and smart*

*The traffic controller with a sense of the essential*

SIEMENS



## DISCRIPTION

- for controlling more than **64 signal groups**, up to **104 parallel inputs and 40 parallel outputs**.
- **230 V low power LED lamp switch module for 5-18 W LED signal heads**.
- **24 V LED lamp switch module** for brand new 1 Watt technology
- Fast and easy traffic actuation for phase request and determination with **new VA method Sitraffic® sLX** which is configured in smart Core.
- Fast and easy coordination by means of GPS synchronization phase.
- Connection to **smartGuard or Scala** via Canto and compatible to Stream.

**SX – THE WEBBASED ALL-IN-ONE SOLUTION**



SITRAFFIC – SX

*Small and smart*

*The traffic controller with a sense of the essential*

**SIEMENS**



## COSTUMER BENEFITS

- Intuitive operating and diagnosis concept with HTML5 web browser and additional customer functions (e.g. **remote access**)
- Unique opportunities for adaptation to local requirements by means of Java programming and open interfaces in the unit
- Modular framework structure optimized for one unit with 16 signal groups and **24 I/Os**, **thereby reducing costs and saving space**
- **Extended temperature range –40°C to +60°C.**

**SX – THE WEBBASED ALL-IN-ONE SOLUTION**

**...and many more.**

# SITRAFFIC MOTION

*Manage traffic in a clever way – use adaptive network control at its best!*



## DESCRIPTION

**OPTIMIZE CYCLE TIMES AND COORDINATE CRITICAL AREAS OF THE CITY  
BY ADAPTING CONTROLLERS TO CHANGING TRAFFIC VOLUMES**

- Part of the urban traffic center and used in **critical traffic areas** of a city
- Optimizes traffic automatically 24/7 without the need of interaction



## COSTUMER BENEFITS

- Greater efficiency of the road network without any reconstruction
- Reduction of waiting times for non-motorized road users

## SITRAFFIC MOTION

*Manage traffic in a clever way – use adaptive network control at its best!*

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### DESCRIPTION

- Dynamically adapts traffic light systems to changing traffic conditions, including lane capacities, identified congestions, etc.
- Only model-based network control in **German-speaking countries** that optimizes all key control variables (cycle time, green time, etc.)



### COSTUMER BENEFITS

- Long-term retention of value of the traffic planning
- Increased capacity at bottlenecks in the network
- Genuine coordinated-green-phase optimization
- Updates every three minutes



## COSTUMER BENEFITS

- **SUPPORTS BICYCLE GREEN WAVES** ON BIKE MAIN ROADS
- **COST-EFFICIENT** REALIZATION OF A BICYCLE PRIORITIZATION VIA APP
- WILL INTENSIFY THE TREND TOWARDS GREEN WAVES FOR CYCLISTS
- WILL **HELP TO CHANGE THE MODAL SPLIT** TO CYCLISTS
- **GROUNDBREAKING STATEMENT** FOR BICYCLE TRAFFIC



## COSTUMER BENEFITS

### 1 GPS-POSITION

Over GPS the position, speed and driving direction is calculated

### 2 SIBIKE APP

By crossing a virtual trigger line the prioritization is activated

### 3 TRAFFIC MANAGEMENT SYSTEM

The activation is forwarded to the traffic management system (TMS) The TMS creates a command and send it to the traffic light controller

### 4 TRAFFIC LIGHT

The traffic light receives the command, the traffic actuation executes the green time enlargement and the cyclist is prioritized



...success stories all over the world



*We help cities create an attractive, competitive and sustainable future.*



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Service contract for **2200 light** signals of Transport for Greater Manchester (TfGM)

Length of contract: **15-year contract**

(starting in 2011) with an option to extend  
by a further five years

So far, **600 controllers** have been replaced

and about **50,000 LED** optical units have been installed

Guaranteed availability: **97.7%**

Results so far: Energy savings worth **GBP 700,000** and a **30% reduction** in the  
monthly failure rate



## EUROPE'S MOST ADVANCED TRAFFIC CONTROL AND INFORMATION CENTER

Controlling more than 2000 traffic controllers, 1100 detectors, 250 cameras and eight traffic management systems

Total length of the network of roads, tunnels and motorways **covered: 1500 km**

Traffic information is made available to the public, **the media and the authorities via Internet, e-mail and SMS text message services**



## TRENDS IN DIGITALIZATION

- Rapidly growing amount of data from various sources:
  - **INFRASTRUCTURE**
  - **CARS**
  - **MOBILE PHONES**
- Increasing communication bandwidth and higher coverage
- Systems have to be adaptive and easy to update

## SIEMENS' SMART SOLUTIONS (TODAY)

Cloud-based Traffic Management  
"smartGuard"

- **EASY TO USE**
- **ACCESS FROM ANYWHERE (WEB-BASED)**
- **LIMITED INVESTMENT**

sX: new controller generation

- **PLUG&PLAY, EASY TO SETUP**
- **REMOTE WEB-ACCESS**
- **UPDATES ON-THE-FLY**

## FUTURE DEVELOPMENTS

- **Vehicle-2-Infrastructure communication**
- **Big data analysis for predictive traffic management**
- **Intermodality: Merging of different modes of transport**
- **Partner for cities in self-driving vehicles**