

# SMARTER CONNECTED SOCIETIES







# **Smart City Solutions & Enablers**



#### Smart Lighting

There is an on-going rush to substitute all light bulbs with LED elements due to environmental and energy savings reasons. By combining LED technology with communication and sensing capabilities, in the same lighting infrastructure, city authorities not only drastically reduce energy consumption and overall city OpEx, but also generate revenues to fund the transformation & modernization of critical city infrastructure. At the same time, they provide smart services to their citizens such as Internet Access, Smart Parking, Physical Security, Waste Management and Location-based Content Push.



#### Smart Parking

Strategically placed ultrasonic sensors, located in selected lighting poles, detect the presence of cars parked in the monitored Smart City areas in real-time. A centralized GIS environment visualizes both occupied and free parking slots, in order to inform citizens for available parking spaces, as well as authorities for potential parking violations.



## Waste Management

Smart Waste Management sensors are placed in every waste bin to alert city authorities to collect and disseminate everyday wastes. As a result, littering during transfer to the Recycling Units is prevented, while speedy transportation of the waste is allowed, minimizing disruption of the City traffic conditions during peak hours.



# Sound Monitoring

Autonomous and continuous monitoring of noise levels in the city 24 hours a day, 7 days a week, based on sensor measurements. Real-time information is provided on the monitored areas and alerts are generated when threshold noise limits are exceeded or specific noise patterns are identified.



# Traffic Monitoring

Advanced device-counting functionality, supported by Ultra Sonic sensor verification, can detect and count, in real-time, cars and humans passing by. Congestion conditions can be sensed or predicted and analytics-driven corrective actions can be triggered. Integration with related external traffic data sources provides for increased accuracy of the system, further ensuring the traffic conditions of the City.



# Smart Metering

Achieving Energy Management, one of the fundamental goals of the smart city concept, requires that energy meters go beyond measuring energy consumption and production. As intelligent hubs, smart meters also administer the in-house energy demand, integrate water & gas meter readings and offer monitoring & control for smarter consumption.



## Personal Security

Bluetooth-equipped light poles can serve as emergency hubs: by pressing a personal Bluetooth Panic Button when a citizen is threatened, the most approximate light switches to full brightness, while alert messages are dispatched to the operator, triggering further security actions.



#### eHealth Services

Through the Smart City ecosystem, healthcare professionals can share their expertise, improve their professional training, enhance collaboration, facilitate research participation and improve patient satisfaction. Similarly, healthcare institutions can offer their services more efficiently and monetize their service portfolio globally.



#### Wi-Fi Liberation

Municipal Authorities can now lease dedicated virtual network "slices" over the same physical Wi-Fi access points to multiple Service Providers or Enterprises. By unifying disparate infrastructure, this solution minimizes up-front investments, generates new revenue streams for the network infrastructure owners and enables citizens to enjoy seamless services by their favorite operator across the entire Smart City.



#### **Enablement & Monetization**

Smart Cities demand for fast services creation, cost optimization & revenue generation with smart charging, seamlessly powering multiple verticals: City Infrastructure, Home Automation, eHealth, Transport & Logistics, Energy & Utilities and many others. A centralized management & control of Smart City Services, providing aggregated and insightful information for municipality Smart Assets usage (lighting, waste bins, car fleet, smart meters, etc.), enables the automation of cross-domain operational processes, increasing efficiency and security.



## Plug N' Play Connectivity

A "communication fabric" deployed across the entire city to ensure that all components/sensors are fully interconnected via stable links. Various technologies enable device connectivity at all network levels. The combination of point-to-point and point-to-multipoint wireless access technologies provides efficient and reliable component interconnection anywhere in the Smart City clutter.



#### Cloud Assurance

Cloud Computing provides on-demand the necessary scale, storage, processing power and security controls required to implement innovative technology solutions requiring ubiquitous access. Smart City implementations harness the power of Cloud Computing technologies to facilitate deployment and service delivery, increase service utilization and management efficiency as well as to minimize complexity and costs.

# Smart City Products & Solutions Portfolio

Solutions & Enablers  Products & Platforms	Smart Lighting	Smart Parking	Waste Management	Sound Monitoring	Traffic Monitoring	Smart Metering	Personal Security	eHealth Services	Wi-Fi Liberation	Enablement & Monetization	Plug N' Play Connectivity	Cloud Assurance
Multi-purpose Lighting Gateway	•	•			•		•		•		•	•
Wireless Sensors-based Smart City Services		•	•	•	•							
Unified IoT Management & Monetization Platform	•	•	•	•	•	•	•	•		•		•
Virtual Network Services Innovation Platform									•		•	•
Advanced Metering Platform						•				•		•
Big Data Analytics Platform	•	•	•	•	•	•	•	•		•		•
eHealth Platform								•				•
Software-Defined Radio	•	•	•	•	•	•	•		•		•	
Cloud Solution	•	•	•	•	•	•	•	•	•	•	•	•

# Wireless Sensors-based Smart City Services

A Smart City solution, developed by Urbiotica, captures and distributes real-time information on what is happening in areas of parking and noise pollution. Based on sensors measurement, real-time information is provided on the monitored areas and alerts generated when the established noise limits are exceeded.

# Multi-purpose Lighting Gateway

A highly sophisticated gateway, powered by ICE, acts as a data collector, especially from Bluetooth devices and powers Smart City solutions such as Smart Lighting, Smart Parking, Physical Security, Traffic Management and Wi-Fi Access.

#### Virtual Network Services Innovation Platform

Intracom Telecom's latest state-of-the-art platform allows CSPs and enterprises to seamlessly and safely create innovative virtual network services in minimum time-to-market. By fully leveraging the SDN and NFV concepts, providers may deploy Virtual Network Functions (VNFs) and easily chain them together creating new services, all via an intuitive Service Function Chaining and Orchestration GUI. The platform is designed to virtualize any 3<sup>rd</sup> party access points deployed across a Smart City, allowing for secure, multi-tenant utilization of the virtualized network. OPEX may also be dramatically reduced, with the optional NFV Accelerator that dynamically conserves power on the data center, while making sure all VNFs perform above any agreed SLAs.

# Advanced Metering Platform

State-of-the-art power & water meter technology solutions to help Smart Cities realize end-to-end cloud-based Energy Management, Electric Vehicle Charging, Customer Care Portals and advanced Energy Analytics.

#### Software-Defined Radio

StreetNode<sup>™</sup> is a breakthrough, all-outdoor product specially engineered to provide top-notch performance in numerous backhaul applications. A dashboard-controlled software-defined radio (SDR) enables interconnection of all Smart Cities sensors with core network.

#### Cloud Solution

Cloud infrastructure is crucial for the entire Smart City ecosystem because it reduces the upfront infrastructure costs and underpins pay-as-you-grow business models. Intracom Telecom, being a regional wholesale Cloud Service Provider, is the expert consulting partner for building a robust and secure solution that leverages the benefits of the Cloud.

## Big Data Analytics Platform

BigStreamer™ is a Big Data Analytics and Complex Event Processing platform that couples streaming, data-driven insights with real-time actions. It is aligned with TM Forum's standards & best practices and is ideal for generating actionable insights from all Smart City data flows.

# Unified IoT Management & Monetization Platform

Intracom Telecom's IoT platform leverages a list of horizontal IoT components as well as powerful open API's, enabling the communication among a wide range of sensors and devices, in order to seamlessly support the management and charging of multiple verticals, like Smart Cities, Smart Home, Smart Health, Transport & Logistics, Energy & Utilities and many others. The platform comes with a Unified Management & Control environment, which provides aggregated insightful information for municipality Smart Assets, allowing for full monitoring of all resources' status & usage, identification of erroneous situations, as well as processes automation & streamlining.

#### eHealth Platform

PACS Services is an innovative and integrated solution offering of Picture Archiving and Communication System, designed with the highest level of expertise in the ICT area and offered to healthcare organizations through Cloud Computing architecture – As a Service. Intracom Telecom offers a cloud-based educational content delivery platform which, in conjunction with its telemedicine solution, provides state-of-the-art services in order to advance medical professionals' expertise and improve quality of patient care across the globe.

# Why Intracom Telecom

- » advanced technology and extensive expertise, for over 40 years, to implement large scale projects
- » international successful track record with over 100 customers in more than 70 countries
- » ability to combine own products with those of other vendors
- » local presence in Europe, Russia and the CIS, the Middle East and Africa, Asia and North America
- » "One-stop Shop" offering comprehensive product & solutions portfolio along with system integration and professional services capabilities
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