Curb Management Solutions

Smart Cities

➢ **Curb Asset Mapping**
➢ **Curb Monitoring**
➢ **Curb Messaging**
➢ **Curb Enforcement**
➢ *Parking Enforcement*

Curb Asset Mapping

SenMAP is a Curb Asset Audit solution offering a transformative approach to city asset mapping, access accurate data, streamlined processes, and enhanced decision-making capabilities. Our structured assets data provides Local Authorities and Councils a bird's eye view of the current state of assets with a complete geospatial solution for mapping any asset in an area.

Our solution uses live video recordings from multiple sources such as handheld devices and vehicle mounted cameras to scans and identifies city assets like parking meters and street signs, advertising signage and fire hydrants, even bikes and scooters parked on curbs and compile this information into a digital asset system along with their location and associated characteristics.

What this solution can do for you

Establish a Baseline

Understand city asset's base numbers to recognise and adapt to the evolving needs of citizens.

Proper Asset Tracking

Detect, classify and determine GPS location of street assets.

Database Management

Creation and management of a centralised asset database, making it easier to track the lifecycle of each asset.

Asset Audit

Elimination of pay machines and calculating parking stall counts enables proactive planning, reducing downtime.

Key Features

Flexible data collection source

Search and review assets
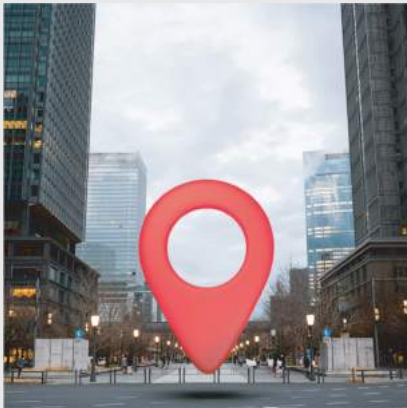
Review interface for auditing

Revenue leakage reduction

Web application

Asset Maps from Street View

Asset Mapping using Smart Phones

GIS Integration

SenSen utilizes panoramic imagery to document a wide array of street elements, including signs, infrastructure, and amenities, all with precise GPS coordinates. The remote accessibility of Street View imagery minimizes the need for physical site visits, streamlining the auditing process, while integration with GIS systems allows for advanced spatial analysis.
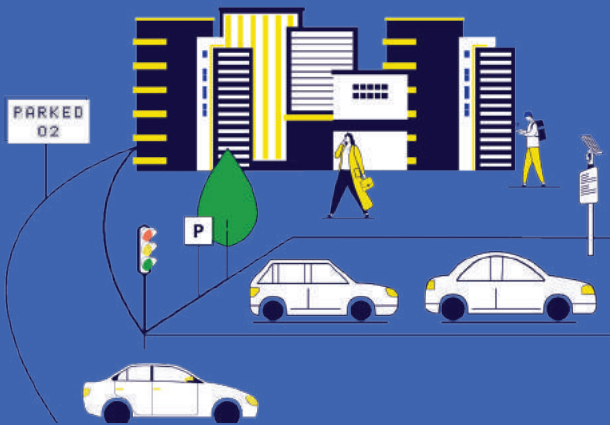
Mobile phone cameras equipped with geotagging capabilities are a convenient and cost-effective option for city asset auditing. City personnel can use their smartphones to capture images and videos of street assets as they conduct routine patrols or inspections while the GPS coordinates automatically record the asset's location.

SenSen's integration with ArcGIS & Google Maps aids in city asset auditing by combining spatial data from multiple sources and formats to create a comprehensive centralised database. This integration offers real-time mapping and streamlines data collection, analysis, and reporting for efficient urban infrastructure management.

Curb Monitoring

SenPIC is a pole mounted camera-based curb space monitoring platform that digitalizes curbside regulations helping cities to quantify previously unavailable mobility data to support the economic health and livability of the curbside space, by simultaneously minimizing congestion and maximizing safe access for all.

SenSen's Digital Curb Management solution detects real-time bay occupancy for vehicular traffic, monitors pedestrian and bicycle presence and collects data such as people counts at specific locations, peak occupancy hours, double parking, vehicle classification and other metrics.

What this solution can do for you

Collects real-time data

Real-time data helps commuters find the available curbs easily and helps cities to manage the curb better.

Access to Parking

Parking was made easier such that people can more reliably park close to their destination.

Improves commercial vitality

People and businesses can more reliably access commercial and retail areas with better amenities.

Understand usage

Provide data and tools to help the cities better manage curbs and guide changes to improve.

Key Features

Solar-powered device

Boost curb space productivity

Alerts on unauthorised parking or overstays

Deployable to existing poles

Being natively cloud-connected

Positively transforming people's lives through Sensor AI

SenPIC Pole Sensors

SenSen's pole sensors consists of a small sensor with batteries. It can be installed in any pole available on the curb, including parking signage pole, and can be easily relocated with minimum effort.

Designed to simplify fixed deployment at an affordable price.

Key Benefits

- Rapid unit deployment
- Affordable and utilizes existing street infrastructure
- Low power consumption
- Privacy Masking

Curb Messaging

SenSen's Curb Messaging for Dynamic Curb Management is aimed at transforming how cities handle parking conditions, streamlining curb-side experiences for motorists, reducing confusion, and enhancing overall curb management. SenSen empowers cities to continuously monitor critical parking conditions, allowing you to respond promptly to changes in demand.

The accessibility to real-time data empowers city officials to make informed decisions swiftly and enables motorists to navigate parking restrictions with ease. Curb messaging reduces confusion and contributes to a more streamlined and efficient urban mobility experience.

What this solution can do for you

Color e-ink technology

Display parking information on vibrant color e-ink signs ensuring visibility in all lighting conditions.

Remotely programmed & updated

Stay in control from anywhere making it easy to adapt to changing parking conditions or special events.

Deployable to existing poles

Integrate into existing regulatory poles and on-street infrastructure, reducing installation time and costs.

Loading Zone Management

Initiate real-time countdown timers for loading zones allowing authorities to monitor usage efficiently.

Key Features

Cloud connectivity

Improved signage communication

Customizable rules

Event based adaptability

Compliance monitoring

Positively transforming people's lives through Sensor AI

SenPIC Pole Sensors

A fixed and compact unit combining specialist camera hardware and software for a high-tech, all-in-one solution

Designed to simplify fixed deployment at an affordable price.

Digital Parking Sign

Simplify the parking condition message by using a 'live' time-of-day display which could also include the 'next' parking condition provides a long overdue opportunity to declutter the cluster of traditional parking signs with a simplified information experience for drivers.

Say goodbye to deciphering complex parking signs and embrace the simplicity and efficiency of Digital Signs. Experience the future of parking signage, where clarity and convenience reign.

Key Benefits

- Rapid unit deployment
- Flexible mounting options
- Low power consumption
- External device control (boom gate)

Key Benefits

- Eliminate signage confusion
- 'Real-time' parking conditions
- Special event changes
- Controlled loading zones

Curb Enforcement

SenFORCE is an automated curbside enforcement solution for monitoring parking regulations. We offer a wide array of camera-based hardware solutions providing the flexibility to integrate with your existing fleet that continuously monitors activity within the curb area. SenFORCE recognizes and enforces rules in complex zones such as bus lanes, clearways, no parking zones, and more to ensure accurate and reliable enforcement.

Our technology detects vehicles out of compliance with local ordinance enabling parking officers to enforce the infraction immediately or send ticket by mail. SenFORCE is equipped with Environmental Mapping Technology (EMT), a completely new and revolutionary approach that solves the "urban canyoning" problem of large cities.

What this solution can do for you

Mobile Traffic Surveillance

With on-vehicle cameras, enforcement during patrol gets easier independent of location, even in remote places.

Improved Operational Productivity

Officers can cover parking hotspots up to 10 folds higher without any breakdown or fatigue.

Environmental Mapping Technology (EMT)

Intelligently build an up-to-date street view to precisely determine the exact location even when the GPS signal is blocked.

Verifiable Evidence Package

Complete proof of violation including vehicle and environmental photos as well as GPS coordinates.

Key Features

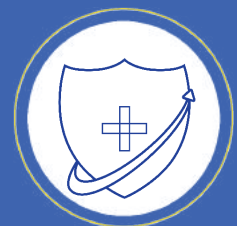Trigger less, video-based vehicle detection

Resistant to harsh weather conditions

In-vehicle dashboard with live detections

Fast, secure and reliable database

Improved OHS and well-being of parking officers

Positively transforming people's lives through Sensor AI

SenFORCE
Mobile

SenSen's vehicle-mounted mobile enforcement solution consists of several critical proprietary software and hardware components.

The modules are carefully chosen and packaged to meet city's requirements. This modular approach allows us to deliver complete end-to-end solutions to meet all mobile enforcement needs.

Key Benefits

- Environmental mapping technology
- Automatic violation detected in any pre-defined zone
- GIS parking zone management
- High accuracy & uptime reliability

SenFORCE
Handheld

A handheld and highly versatile android-based solution with the ability to detect all vehicle and parking zone information.

Designed to help streamline business workflow and day-to-day parking operations.

Easy-to-use, high performance software can detect vehicle make, model, colour, perform vehicle classification along with number plate detection.

Key Benefits

- Flexible modes of operation
- Seamless external integration
- Improves efficiency of rangers
- Increases productivity & revenue

SenFORCE
Fixed

SenFORCE Fixed is the world's first fixed camera parking enforcement solution. Our breakthrough allows automated parking enforcement via fixed cameras and number plate recognition software.

Fixed camera parking enforcement works by continuously monitoring the vehicles parked under the camera view. The system is designed to operate in real-time in the toughest environmental conditions.

Key Benefits

- 24-hours enforcement solution
- Flexible processing system
- Accurate number plate detection
- Vehicle tracking capability

Parking Enforcement

SenSCAN is a highly accurate and affordable Automated License Plate Recognition (ALPR) solution consisting of patented software with smart algorithms and AI. It works on off-the-shelf low cost hardware with cloud-based back office, enabling robust and highly accurate evidence generation for all parking & permit related infringements.

Our solution comes with three different options, which are fully customisable with dynamic threshold time limits and business rules. These highly accurate and compliant solutions can be integrated with any external system and detects fraudulent access, ticket exchange, or attempted vehicle theft while assisting organisations in streamlining and maximising existing parking enforcement infrastructure.

What this solution can do for you

Automated Violation Detection

The 100% automated solution detects and identifies vehicles in violation without any external trigger.

Accurate Evidence Generation

Complete evidence packages are compiled with 99% accuracy, reducing the need for litigation.
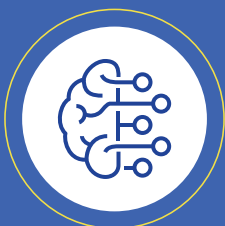
Streamline Enforcement Process

Real-time alerts and remote monitoring services with a detailed and centralised access to infringement data.

Improve Operational Productivity

The efficient solution enforces 1000s of vehicles per hour, which would normally requires 4-5 rangers on foot.

Key Features

World's most advanced AI -enabled enforcement

Cost effective end-to-end solution

Highly accurate and automated workflow

Alerts verifications alongside the permit data

License plate detection & capture

Positively transforming people's lives through Sensor AI

SenSCAN
Fixed

A fixed and compact unit combining specialist camera hardware and software for a high-tech, all-in-one solution.

Designed to simplify fixed deployment at an affordable price.

SenSCAN
Handheld

A handheld and highly versatile android-based solution with the ability to detect all vehicle and parking zone information.

Designed to help streamline business workflow and day-to-day parking operations.

Easy-to-use, high performance software can detect vehicle make, model, colour, perform vehicle classification along with number plate detection.

SenSCAN
Mobile

A mobile and weatherproof kit that can be easily deployed to support any vehicle type. It is completely handsfree and captures evidence without manual operation.

Designed for the future, but available now.

Affordable and customizable parking enforcement solution that is available in multiple configurations to suit any customer.

Key Benefits

- Rapid unit deployment
- Flexible mounting options
- Low power consumption
- External device control (boom gate)

Key Benefits

- Flexible modes of operation
- Seamless external integration
- Improves efficiency of rangers
- Increases productivity & revenue

Key Benefits

- Handsfree operation
- Highly portable & adjustable
- Compatible with all vehicle types
- Accurate data even in tough environmental conditions

API INTEGRATIONS

EziCom² · dca · CIVICA · ADR · Cell Park · infor

P · DUNCAN SOLUTIONS · AIMS · Passport

REPRESENTATIVE CUSTOMERS

BRISBANE CITY · NATIONAL PARKS & WILDLIFE SERVICE NSW · WA POLICE · NSW GOVERNMENT · 7-ELEVEN · SHELL · CALTEX · bp

CITY OF LOGAN · CITY OF GREATER GEELONG · THE CITY OF CALGARY · CPM CHICAGO PARKING METERS · COX · THE CITY OF Edmonton

NHVR Portal · MORNINGTON PENINSULA Shire · CITY OF Las Vegas · CHANGI airport singapore

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Transforming people's lives
through Sensor AI technologies.