SMART PARKING SPACES, SMART ENFORCEMENT, SMART PERMITS, SMART PAYMENTS, AND EASY GUIDANCE POWER SMART CITIES
Our Heritage

• A pioneer in parking technology – leader in smart city technologies
  – Built upon 80 years of city-wide parking systems and enforcement experience
  – Delivered meters, smart meters, credit card, wireless
  – Enforcement platform and wireless handled used by over 500 cities
  – Delivered world’s best radar parking space sensor with over 99.5% accuracy

• A parking industry pioneer since 1936
  – Parking equipment supplier to 2000 cities
  – Mobile enforcement platform used by over 500 cities in USA and Australia
  – Patented sensors used in USA, Australia, Africa
  – Clients include cities of Chicago, Los Angeles, Miami, New Orleans, Raleigh, North Sydney, Harare, Accra, etc.
  – Bengaluru based center of expertise quietly supporting a global client base of leading cities for many years.
  – Industry wide partnerships including with leading Fortune 100 firms to enable the best solution for cities

We are the city-wide, on-street parking experts and can help unlock the value of city’s parking assets
CivicSmart – the UAE connection

- Bangalore based center of expertise supporting global city-wide parking in leading cities since 2008 including Los Angeles, Sydney, Perth, Chicago, Miami, and many others!
- We combine the best of global expertise (combined 125 years of city parking experience at leading cities) with India capabilities and knowledge. Built on 80 years and 2000 cities parking experience!
- We are leaders in payment technology and city-wide parking enforcement and management with comprehensive solutions and services.
- With regional offices in India (Bengaluru & Mumbai) and recently established office in UAE we bring you the connectivity that’s primary to the smart parking managements. Our Global Support center is establishing a node for support in the UAE to support the local and regional installed base.

We are the premier Smart Parking company in Middle East and the world!
CivicSmart offers an integrated solution that helps build Smart Cities, eliminate inefficiencies, and deliver high-quality services to citizens.
Sensors

• CivicSmart sensors are radar based, directional sensors
• Sensors are built with life-time battery (8-10 years) hence no external power source is needed
• Can be mounted anywhere near the parking space and are available in a variety of mounting configurations
• Programmable detection area
  – Excludes all objects outside the detection area
• All weather, hermetically sealed, rugged enclosures with no lens or openings
  – Withstands direct automotive traffic; unaffected by automotive fluid spills and roadside debris
• Single, highly reliable technology (we do not combine multiple unreliable technologies)
• Vandal resistant – tolerates spray paint, hammer blows, etc.
## How does accuracy matter?

<table>
<thead>
<tr>
<th>Session accuracy required</th>
<th>&lt;90%</th>
<th>&lt;99%</th>
<th>&gt;99%*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayfinding</td>
<td>⚠</td>
<td>⚠</td>
<td>✓</td>
</tr>
<tr>
<td>Courtesy free time upon arrival</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Violation detection and directed enforcement</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Meterless parking</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Remove unused time (pay-by-space)</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Anti-topup / Anti-meter feeding</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Clearance information for shared traffic lanes</td>
<td>⚠</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Turnover data for rate setting</td>
<td>✗</td>
<td>⚠</td>
<td>✓</td>
</tr>
<tr>
<td>Time limited free parking enforcement</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Flexible / non-linear rates</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Dynamic / surge pricing</td>
<td>✗</td>
<td>⚠</td>
<td>✓</td>
</tr>
</tbody>
</table>

* The less than 1% error should always be in favor of the motorist
Gateways

- Gateways are located within a few hundred feet of the sensor and are typically installed on light poles, parking signs, or traffic signal poles.

- CivicSmart will analyze available gateway mounting locations and identify suitable options.

- Gateways are dual powered with built-in Battery and SolarPower, thus eliminating the need for any external power source.
Permit parking management

• A powerful capability of the CivicSmart sensor is that it can read a unique signal transmitted by an in-vehicle wireless module
• Two-way low data rate (LDR) capability from sensors is used to maintain the permits remotely (change expiry dates, blacklist, link accounts, etc.)
• This wireless module converts any standard placard or permit into an intelligent device uniquely identifying the vehicle occupying the space
• When specific placards are detected, special rules/permissions for the permit holder can be applied:
  • Disabled motorists
  • Eco-friendly (EV) vehicles
  • Residential permits
  • Commercial/loading zones
  • Reserved spaces for shared-ride services
  • Staff/student/faculty parking
  • Visitor parking
Enforcement software

- AutolIssue wireless enforcement software is the leader in the industry
- Full enforcement workflows tailored to city requirements
- Full ANPR capability
- Supports contactless policing
- Works on Android, Windows Mobile and other platforms
- Integrated or separate printer
Mobile Solutions

- Integrates cash collection, audit, clamping, and towing, tow release, fines, arrears, etc. functions
- Comprehensive server reports
Management System & Smart Data Applications

• Bundled management system package customize based on your needs
  – flexible APIs can interface with internal and external systems

• PAMS
  – Parking Asset Management System – comprehensive GIS based sensor monitoring, space status, maintenance, reporting, and management

• PEMS
  – Parking Enterprise Management System – we have integrated into PEMS, which is a comprehensive GIS based enterprise system that integrates meter payments, sensors, enforcement officer location, and citation data

• Mobile Software
  – PDA software for cash collectors, towing and clamping personnel, and field supervisors. Supports entire workflows for field personnel.
Case Study: Harare, Zimbabwe

Harare, Zimbabwe

- Capital, financial and commercial center
- 2 million people
- Legendary traffic
Case Study: Harare, Zimbabwe

Challenge:

• **Sustainability & Livability**
  – 7,000 parking spaces
  – 160,000 cars entering the city daily

• **Economic Development**
  – No centralized parking management system
  – Parking attendant-based system: inadequate tracking
  – Average revenue per parking bay: $2.50/day
Sensor-Driven Program
Case Study: Harare

Solution:

• **Sensors** installed in high traffic areas

• **Occupancy data** transmitted to central parking data management server
  – Parking marshals equipped with handheld POS devices

• **Payment**
  – Parking marshals accept in-person payments and issue electronic receipts

• **Enforcement**
  – Vehicles without a payment within a grace period result in tow truck dispatch
SENSORS detect when a vehicle enters or exits a parking space.

Parking Marshals accept motorist payments on-street using POS HANDHELD SOFTWARE.

Sensor data is transmitted to DATA MANAGEMENT SYSTEM – if payment transaction is not received within grace period, TOW TRUCK is automatically dispatched.

Tow truck operators receive information on tow-eligible vehicles and report tow activity using SUPERVISORY AND TOW MODULE SOFTWARE.
Case Study: Harare

Results:

• **Economic Development**
  – Increase compliance
  – Increase turnover
  – Average revenue per parking bay: $6+/day

• **Sustainability**
  – Real-time data allows for proper enforcement
  – Reduced congestion through swift removal of offending vehicles

• **Livability**
  – More reliable and predictable parking experience
  – Increased turnover = more opportunities to park and conduct business