



sensen.ai
solving the impossible

Enforcement Projects

Overview & Experience Summary

ASX: SNS

OTCQB: SNNSF

www.sensen.ai



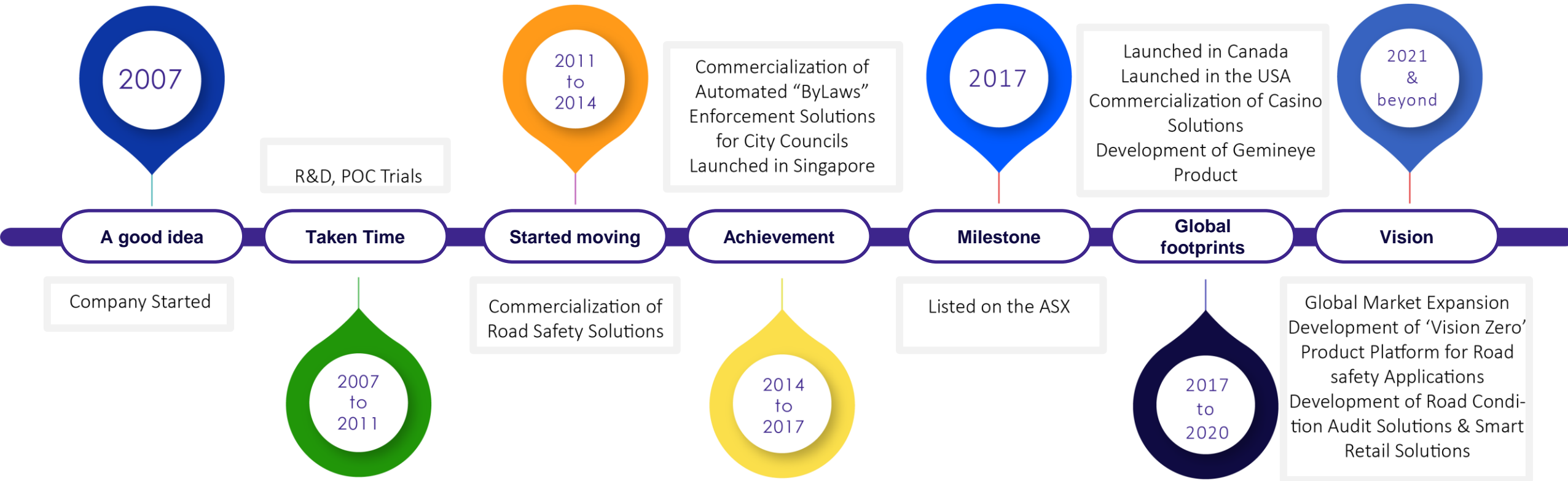
**SenSen is a Publicly Listed,
Australian AI solutions
company**

ASX:SNS Market Cap ~\$120m

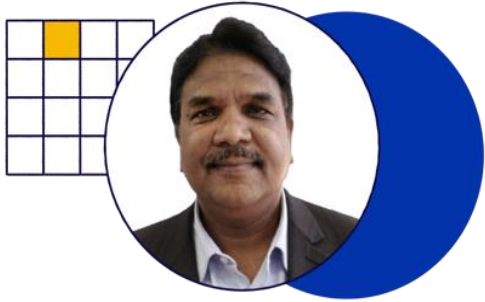
Total Staff ~140 people

**Delivering world leading AI solutions to
Cities, Citizens and Corporations**

SenSen Networks – Corporate History



Board of Directors



Dr. Subhash Challa
CEO

Subhash is a world leading authority in data science specializing in the analysis of video and sensor data with a focus on solving everyday business problems.



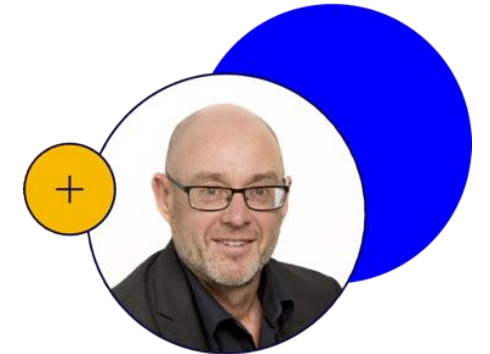
Mr. David Smith
COO

With an extensive background advising companies across all sectors, including tech, industrials and resources, David has driven the evolution of several emerging companies into multi-billion-dollar enterprises.



Ms. Heather Scheibenstock
Executive Director

Heather has over 25 years' experience within the gaming and hospitality industries specializing in strategic planning, business development, stakeholder engagement and offshore growth.



Mr. Zenon Pasieczny
Non-Executive Director

Zenon is an experienced venture capital investor and is closely involved in SenSen's strategic marketing and delivery of global communication messages to clients, partners and the media.

We specialize in Sensor AI



Cameras Computer
Vision



IoT – Sensors



Deep Machine
Learning



Cloud



Data Fusion
Algorithms



Data Science



Object detection,
Tracking,
Classification

**World Leaders in Sensor AI
Solving the Impossible**

Our Secret Sauce

The SenDISA Software Platform

A reconfigurable data fusion software

that interfaces with cameras and sensors to extract accurate & actionable insights to help improve productivity & safety of our customers

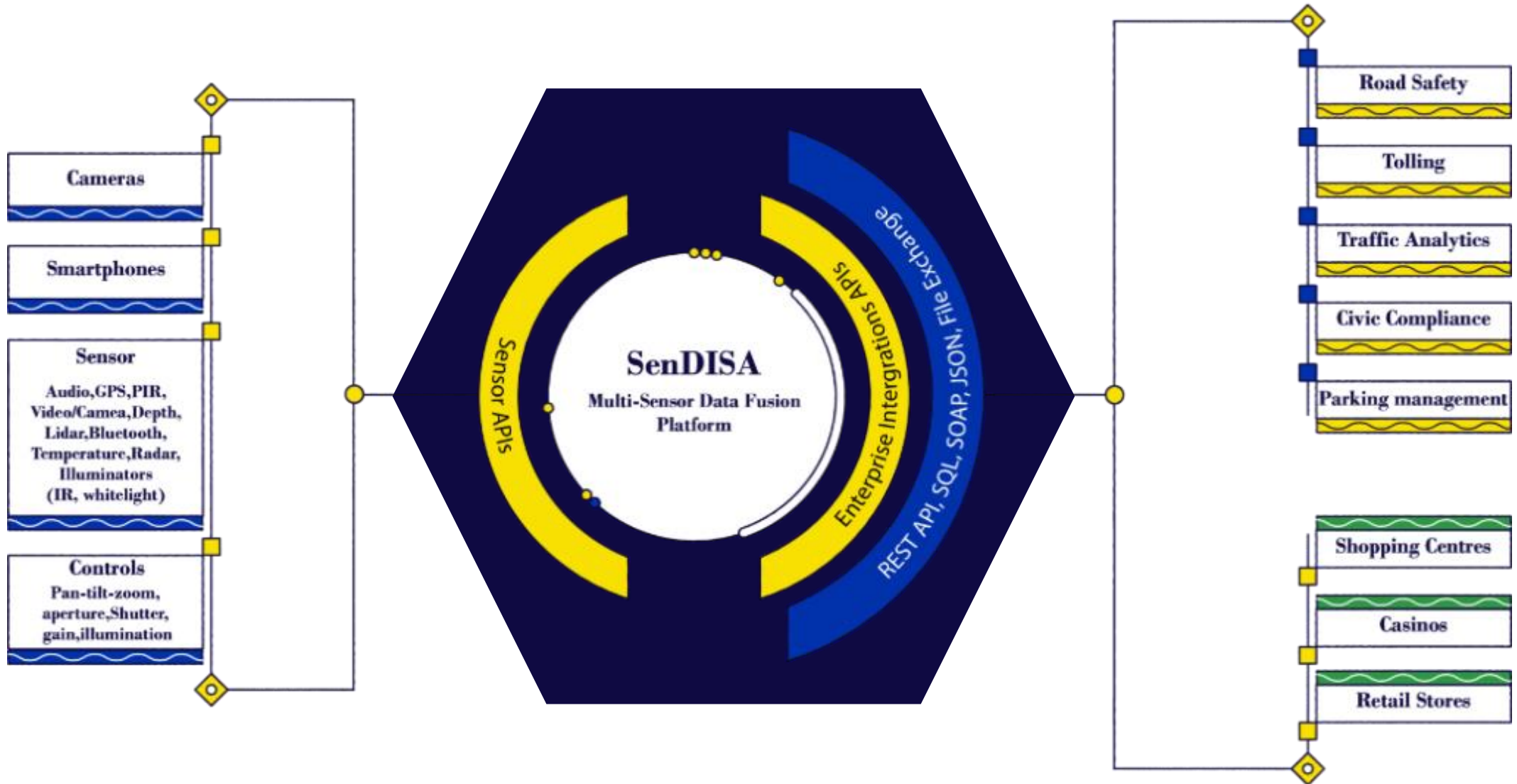
We are the world leaders in **delivering productivity and safety solutions** to Cities, Citizens and Corporations

- We have been developing a software platform called SenDISA for well over a decade with multiple patents protecting the intellectual property associated with it.

- The platform gathers data from multiple live camera feeds as well as data from disparate sensors like GPS, Lidars and other IoT devices in real time, then analyses the data to find patterns and trends hidden within it.

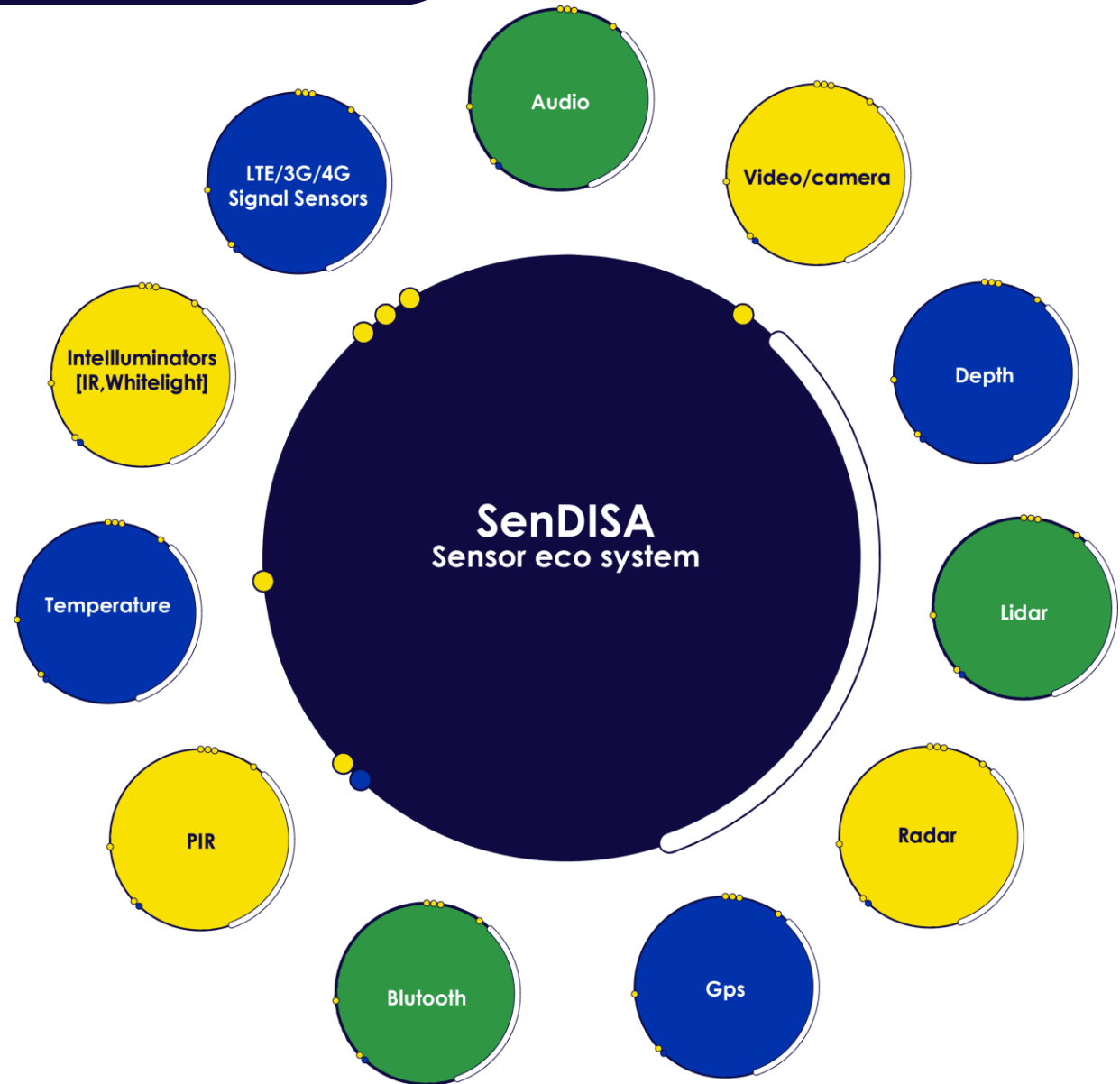
- Three critical components – data fusion, AI algorithms, and software – work together to produce results that improve the productivity and safety of our customers' operations and deliver business insights that are otherwise impossible to obtain from traditional data sources.

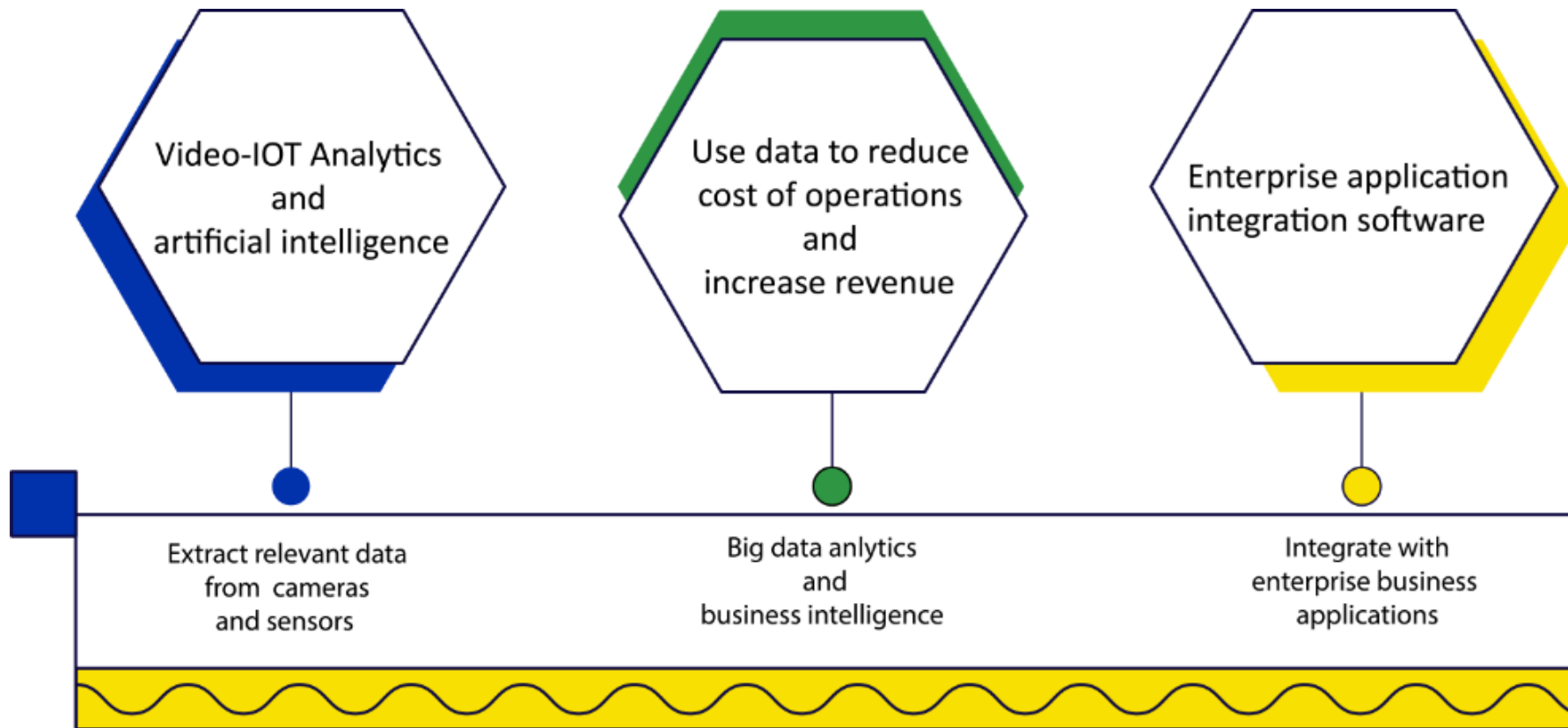
Platform Overview



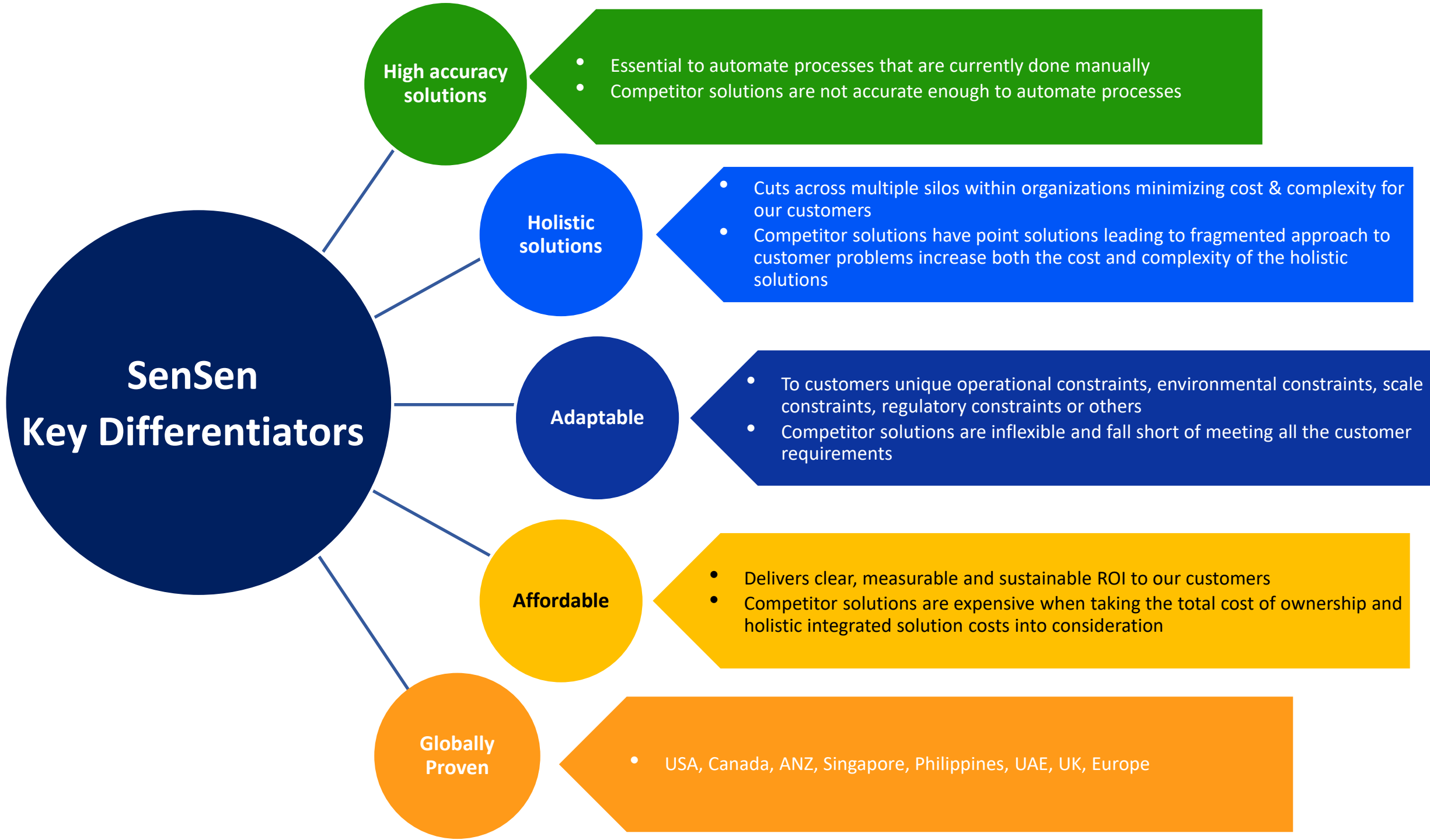
SenDISA Platform

Unleashing sensor fusion technology





SenDISA is a reconfigurable data fusion software platform that interfaces with cameras and sensors to extract accurate and actionable insights in real time. It has been 10+ years in the making with multiple patents awarded and pending... a multi-camera, multi-sensor data fusion software platform that can be reconfigured on demand to meet diverse customer use case requirements.



SenSen Networks – Global footprint

15 Cities in Australia

19 Cities Outside Australia



Corporate Office

Level 1, 9 Harper
Street, Abbotsford,
Melbourne, VIC 3067,
Australia

Tel: +61 3 9417 5368

Other Offices

Perth, Australia
Sydney, Australia
QLD, Australia
Las Vegas, USA
Canada
Singapore

SenSen Networks – Business Segments

Smart Cities

- Smart Curb Management
- Smart Parking
- Road Safety
- Infrastructure Audits
- Traffic and Tolling

Smart Retail

- Anti Fuel Theft
- Retail Loss Prevention
- Smart Asset Protection

Smart Surveillance

- Multi-Camera 'Person of Interest' Tracking
- Video content analysis
- Surveillance Camera & Network Audit
- Live Occupancy

Casinos

- Live Table Game Data
- Rating & Loyalty
- Know Your Customer
- Data Insights

Emerging Solutions

- Robotics
- Games AI
- Tag and Trace
- Smart Curb Sensor

Primary enforcement solutions delivered

Projects, POCs, Trials

Road Safety

Average & Spot Speed

Distracted Driver Detection - e.g., texting while driving

Over Height & Dangerous Goods Vehicle Detection

Vehicle counting & Classification

Illegal Parking

City Bylaws Enforcement Solutions

Illegal Dumping

Personal Mobility Vehicles - PMD Enforcement

Bus Lane Enforcement

SenSen's Enforcement Solutions

44+

Mobile Enforcement Vehicles

50k+

Active Geo-fences

1mn+

Vehicles scanned daily

1000+

CCTV Cameras Enforcing

30+

Smart City Customers

**Australia
Canada
Singapore
USA**

1500+

City Bylaws enforced

Our Customers

Customer	Product	Timeline
Brisbane City Council	7 Vehicles	2018-Ongoing
Logan City Council	2 Vehicles	2016-Ongoing
Ipswich City Council	1 Vehicle	2017-Ongoing
Cairns City Council	1 Vehicle	2019-Ongoing
Goldcoast City Council	2 Vehicles	2019-Ongoing
Port Stephens Council	1 Vehicle	2020-Ongoing
The Hills Shire Council	2 Vehicles	2021-Ongoing
City of Greater Geelong	2 Vehicles	2019-Ongoing
Tweeds Head Council	1 Vehicle	2020-Ongoing
Calgary Parking Authority	11 Vehicles	2017-Ongoing
City of Edmonton	5 Vehicles	2018-Ongoing
City of Las Vegas	2 Vehicles	2020-Ongoing
Chicago Parking Meters	7 Vehicles	2020-Ongoing
LTA Singapore	600+ CCTV Cameras (TR217, TR336)	2017 - Ongoing

Key customers listed for solution case study



Secure Parking,
New Zealand

Brisbane City Council, Australia

Smart Curb Management Solution using SenFORCE Mobile



Delivered systems and Services

Vehicle Mounted Systems

- 6 vehicles with SenFORCE POD (Enforcement)
- 1 vehicle for SenSIGN (Sign audit) and SenFORCE

Ongoing Services

- Sign Audit services for enforcement zones creation
- Maintenance and support services for the in vehicle hardware and software
- Maintenance and support services for the cloud system
- SOC-2 compliance audit
- Network Penetration test

Cloud hosted back office

- Hosting in Australia
- Back office operations
 - Ticket review
 - Owner look up
- Parking permits import from ITSL machines
- Infringement export for ticket by mail to Novapark
- Reporting and dashboards

Enforcement Use cases

- Parking Bylaw Violations
- Metered Parking Violations

Integrated systems

Payments
Machines (Pay
by plate)



GlobalParkingSolution
s(ITSL)
Ezicom
GLOBAL
PARKING SOLUTIONS

Vehicle Address
Lookup

CITEC

Confirm

Infringement Life
Cycle
Management

IMaaS -
Novapark

dca

Single Sign On

Microsoft ADFS

Microsoft
Active Directory
Federation Services

Infringement
Ticket Biller Pay

Australia Post

AUSPOST
BPAY

BPAY

City of Goldcoast, Australia

(Partner: Duncan Solutions, Australia)

Smart Curb Management Solution using SenFORCE Mobile



Delivered systems and Services

Vehicle Mounted Systems

- 2 vehicles with SenFORCE POD (Enforcement)

Additional Services

- One time Sign Audit services for enforcement zones creation
- Maintenance and support services for the in vehicle hardware and software
- Maintenance and support services for the cloud system

Cloud hosted back office

- Hosting in Australia
- Back office operations
 - Ticket review
 - Owner look up
- Infringement export for ticket by mail to Infor Pathways
- Reporting and dashboards

Integrated systems

Vehicle Address Lookup

CITEC (QLD)
SERVICE(VIC)
SERVICE(NSW)



Infringement Life Cycle Management

Infor Pathways



Ticket Biller Pay

BPAY



Enforcement Use cases

- Parking Bylaw Violations

Logan City Council, Australia

Smart Curb Management Solution using SenFORCE Mobile



Delivered systems and Services

Vehicle Mounted Systems

- 2 vehicles with SenFORCE POD (Enforcement)
- 1000+ Enforcement zones

Additional Services

- Maintenance and support services for the in vehicle hardware and software
- Maintenance and support services for the cloud system

Cloud hosted back office

- Hosting in Australia
- Back office operations
 - Ticket review
 - Owner look up
- Infringement export for ticket by mail
- Reporting and dashboards

Integrated systems

Vehicle Address Lookup

CITEC (QLD)

Confirm

Infringement Life Cycle Management

Infor Pathways

infor

Ticket Biller Pay

AUSPOST

Australia Post

Enforcement Use cases

- Parking Bylaw Violations



Ipswich City Council, Australia

Smart Curb Management Solution using SenFORCE Mobile

Delivered systems and Services

Vehicle Mounted Systems

- 1 vehicle with SenFORCE POD (Enforcement)

Additional Services

- Maintenance and support services for the in vehicle hardware and software
- Maintenance and support services for the cloud system

Cloud hosted back office

- Hosting in Australia
- Back office operations
 - Ticket review
 - Owner look up
- Infringement export for ticket by mail
- Reporting and dashboards

Integrated systems

Vehicle Address Lookup

CITEC (QLD)

Infringement Life Cycle Management

Infor Pathways

Ticket Biller Pay

AUSPOST

Enforcement Use cases

- Parking Bylaw Violations



Cairns City Council, Australia

Smart Curb Management Solution using SenFORCE Mobile

Partner: Duncan Solutions, Australia



Delivered systems and Services

Vehicle Mounted Systems

- 1 vehicle with SenFORCE POD (Enforcement)

Additional Services

- Maintenance and support services for the in vehicle hardware and software
- Maintenance and support services for the cloud system

Cloud hosted back office

- Hosting in Australia
- Back office operations
 - Ticket review
 - Owner look up
- Infringement export for ticket by mail
- Reporting and dashboards

Enforcement Use cases

- Parking Bylaw Violations

Integrated systems

Vehicle Address Lookup

CITEC (QLD)



Infringement Life Cycle Management

Civica Authority Altitude



Ticket Biller Pay

AUSPOST



Ticket Print and Post Vendor

DirectMailSolutions



Direct Mail Solutions
We Always Deliver

The Hills Shire,
Australia

**Smart Curb Management
Solution using SenFORCE Mobile**

Delivered systems and Services

Vehicle Mounted Systems

- 2 vehicles with SenFORCE POD (Enforcement)

Ongoing Service

- Maintenance and support services for the in vehicle hardware and software
- Maintenance and support services for the cloud system

Cloud hosted back office

- Hosting in Australia
- Back office database(alerts, zones)
- Alerts export
- Reporting and dashboards

One time service

- Sign Audit services for creation of enforcement zones (GIS) with business rules

Integrated systems

**Infringement Life
Cycle
Management**

SCS
vCompliance



SMARTER CITY SOLUTIONS
Integrated (for) Life

Enforcement Use cases

- Parking Bylaw Violations



City of Greater Geelong, Australia




Smart Curb Management Solution using SenFORCE Mobile

Partner: Duncan Solutions, Australia

Delivered systems and Services

Vehicle Mounted Systems	Ongoing Service
<ul style="list-style-type: none">2 vehicles with SenFORCE POD (Enforcement)	<ul style="list-style-type: none">Maintenance and support services for the in vehicle hardware and softwareMaintenance and support services for the cloud system
Cloud hosted back office	One time service
<ul style="list-style-type: none">Hosting in AustraliaBack office database (violations and zones)Integration APIs for data exportReporting and dashboards	<ul style="list-style-type: none">Sign Audit services for creation of enforcement zones (GIS) with business rules

Integrated systems

Parking Machines	Spot Ticketing Software	Ticket Processing back office
<p><u>Duncan Solutions -TX Multi-Space Meter- Space, Plate or Ticket options</u></p> 	<p><u>Duncan Solutions - AutoIssue</u></p> 	<p><u>Duncan Solutions - PEMS</u></p> 

Enforcement Use cases

- Parking Bylaw Violations
- Metered Parking Violations

City of Las Vegas, Australia

Smart Parking Solutions (SenSCAN) Smart Curbside Management Solution (SenFORCE)



Delivered systems and Services

Vehicle Mounted Systems

- 2 vehicles with SenFORCE POD
- 20+ SenSCAN handhelds
- 14 SenSCAN lightbar
- 35 parking garage entry and exit cameras

Ongoing Services

- Maintenance and support services for the in vehicle hardware and software
- Maintenance and support services for the cloud system
- Support services for creation of enforcement zones (GIS) with business rules.

Cloud hosted back office

- Hosting in USA
- Central database of LPR Detections and violations
- Integration APIs for data export
- Reporting and dashboards

Integrated systems

Permits (Pay machines, Digital permits)

AIMS PARKING
- Permit
Management



PARKING MANAGEMENT SOFTWARE
by EDC Corporation

Spot Ticketing Software

AIMS PARKING
- TICKET
MANAGEMENT



PARKING MANAGEMENT SOFTWARE
by EDC Corporation

Ticket Processing back office

AIMS PARKING
- LPR
Enforcement



PARKING MANAGEMENT SOFTWARE
by EDC Corporation

Enforcement Use cases

- Parking Bylaw Violations
- Metered Parking Violations (No Permit, Expired Permit)

Chicago Parking Meters, USA

Smart Parking Solutions (SenSCAN)



Delivered systems and Services

Vehicle Mounted Systems

- 5 vehicles with SenSCAN In vehicle camera mount
- 2 vehicles with SenSCAN POD with EMT support

Ongoing Services

- Maintenance and support services for the in vehicle hardware and software
- Maintenance and support services for the cloud system
- EMT Support services for creation of background imagery registration for onstreet parking machine zones

Cloud hosted back office

- Hosting in USA
- Central database of LPR Detections and violations
- Integration APIs for data export
- Reporting and dashboards

Integrated systems

Permits (Pay machines, Digital permits)

Passport - Parking Payments



Spot Ticketing Software

Passport - Digital Enforcement



Road Closure Management

Productive/Edge

productive/edge

Enforcement Use cases

- Metered parking violations (Unpaid, Expired, Overpaid, Underpaid)
- Road closures detection and alerting

Calgary Parking Authority, Canada

Smart Parking Solutions (SenSCAN)



Delivered systems and Services

Vehicle Mounted Systems

- 11 vehicles with SenSCAN POD
- 51 CCTV cameras covering 12 carpark entry/exits
- 15 Handheld devices

Ongoing Services

- Maintenance and support services for the in vehicle hardware and software
- Maintenance and support services for the cloud system

Cloud hosted back office

- Hosting in Canada
- Central database of zones, LPR detections
- LPR detections export
- Reporting and dashboards

Enforcement Use cases

- Onstreet and Offstreet LPR
- Parking lot occupancy
- Automatic boom gate access control for permit holders
- Parking occupancy signage integration

Integrated systems

Pay Machines

Parkplus - Pay machines



Infringement generation and ticket by mail system

Parkplus - Tickets back office



Parking occupancy signage

Digital Controls



Boom gate access control

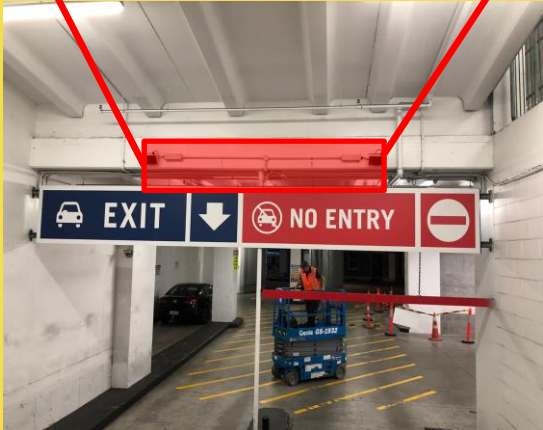
Ethernet Controller

ADVANTECH

Secure Parking, Lumley Centre New Zealand

Smart Parking Solutions (SenSCAN)

Partner: Imperium IQ, New Zealand



Delivered systems and Services

Fixed Mount Systems

- Onfield Gemineye kerbside box mounted on roof/wall
- 1 entry camera
- 1 exit camera
- 2 Tenant cameras

Ongoing Services

- Maintenance and support services for the onfield hardware and software
- Maintenance and support services for the cloud system

Cloud hosted back office

- Hosting in NZ
- Central database of LPR detections and permit alerts LPR detections
- Permit violations export to Adriely
- Reporting and dashboards

Integrated systems

Pay Machines

GlobalParkingS
olutions(ITSL)
Ezicom



Infringement processing and ticket by mail system

Adriely –
Ticketer2



Enforcement Use cases

- Carpark LPR
- Parking permits alerting (No permit, Overstay/Expired permits)
- Whitelist exemption(Tenant permits, Secureparking Permits)

Transport for NSW, Australia

Road Safety Solutions for Speeding Enforcement



Delivered systems and Services

Fixed Mount Systems

- 24 sites
- Color and IR cameras
- NTP Time servers
- Local video processing
- Data transfer to file server

Ongoing Services

- Maintenance and support services for the onfield hardware through a local contractor
- Remote maintenance and support services for onfield software

Software Systems

- On premises hosting in TfNSW gantry infrastructure
- Central database of LPR detections
- ANPR data export to itree (taken over by Objective corporation)
- Web dashboard for certification and data access

Integrated systems

Speeding infringement generation and processing system

itree IS1 module

itree

Objective

Enforcement Use cases

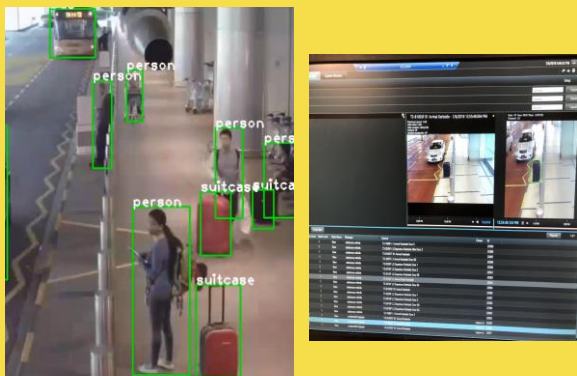
- High speed ANPR 24x7
- ANPR data for point to point/average speeding enforcement

Changi International Airport, Singapore

Smart Surveillance - Video Content Analytics Solutions

Smart Curb Management – Illegal Parking Enforcement

Partner: Beaqon Pte Ltd, Singapore



Delivered systems and Services

Fixed CCTV Cameras

- Airport kerbside VCA analytics on 80+ CCTV Cameras
- Illegal Parking Enforcement on 35+ Cameras
- Edge processing

Ongoing Services

- Maintenance and support services for the onfield hardware through a local partner
- Remote maintenance and support services for onfield and back office software

Back office Software Systems

- On premises hosting in Airport infrastructure
- Central database of Incidents and Violations
- Data export to Milestone VMS
- Web portal for violation review and processing
- Fail over and high availability for VPU
- Deployment on a server cluster environment
- Violations review and download

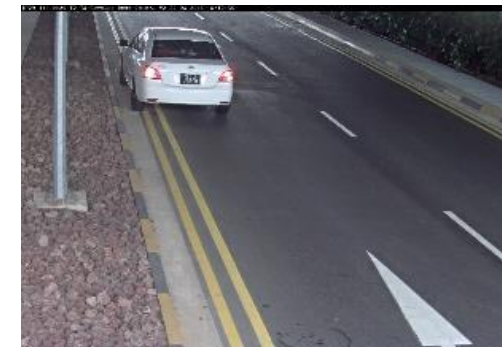
Integrated systems

Control Room software

Milestone
Xprotect
Corporate



XProtect
Corporate



Kerbside Video analytics

- Vehicle overstay detection and classification
- Abandoned baggage detection

Illegal Parking Rules

- Double yellow lines
- Illegal U turn for Taxis

LTA, Singapore

Illegal Parking Enforcement - TR217 and TR336

Partner: ATT Systems Group, Singapore



Delivered systems and Services

Fixed CCTV Cameras

- TR217 all phases cameras – Edge processing for violations
- TR336 all phases cameras – Central processing for violations

Ongoing Services

- Maintenance and support services for the on field hardware through a local partner
- Remote maintenance and support services for on field software

Software Systems

- On premises hosting in partner's premises
- Central database violations from on field devices
- Web portal for violation review and processing
- Fail over and high availability for VPU
- Deployment on a server cluster environment
- Violations review and download

Illegal Parking Rules

- 22 Parking rules (Yellow line, taxi zone, no stopping, fire hydrant etc)

Integrated systems

Violation Processing Software



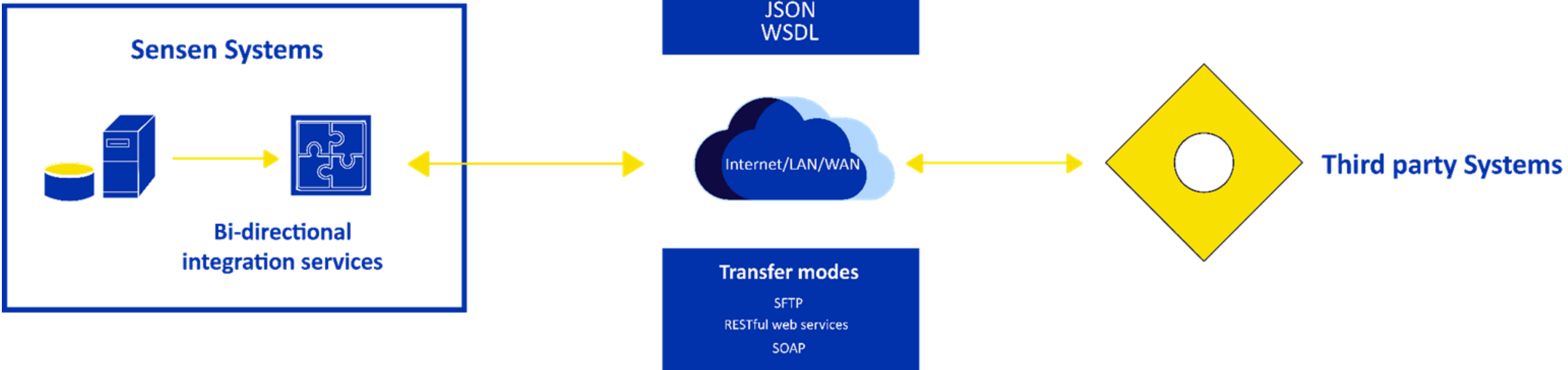
Cognizant

Network Video Recorder

HIKVISION



Integrations overview



Data transfer options

- RESTful web service hosted by SenSen
- SenSen posting data to customer's REST services
- Data transfer to customer's SFTP endpoint
- Customer downloading the data from SFTP hosted by SenSen
- Other options such as SOAP with WSDL

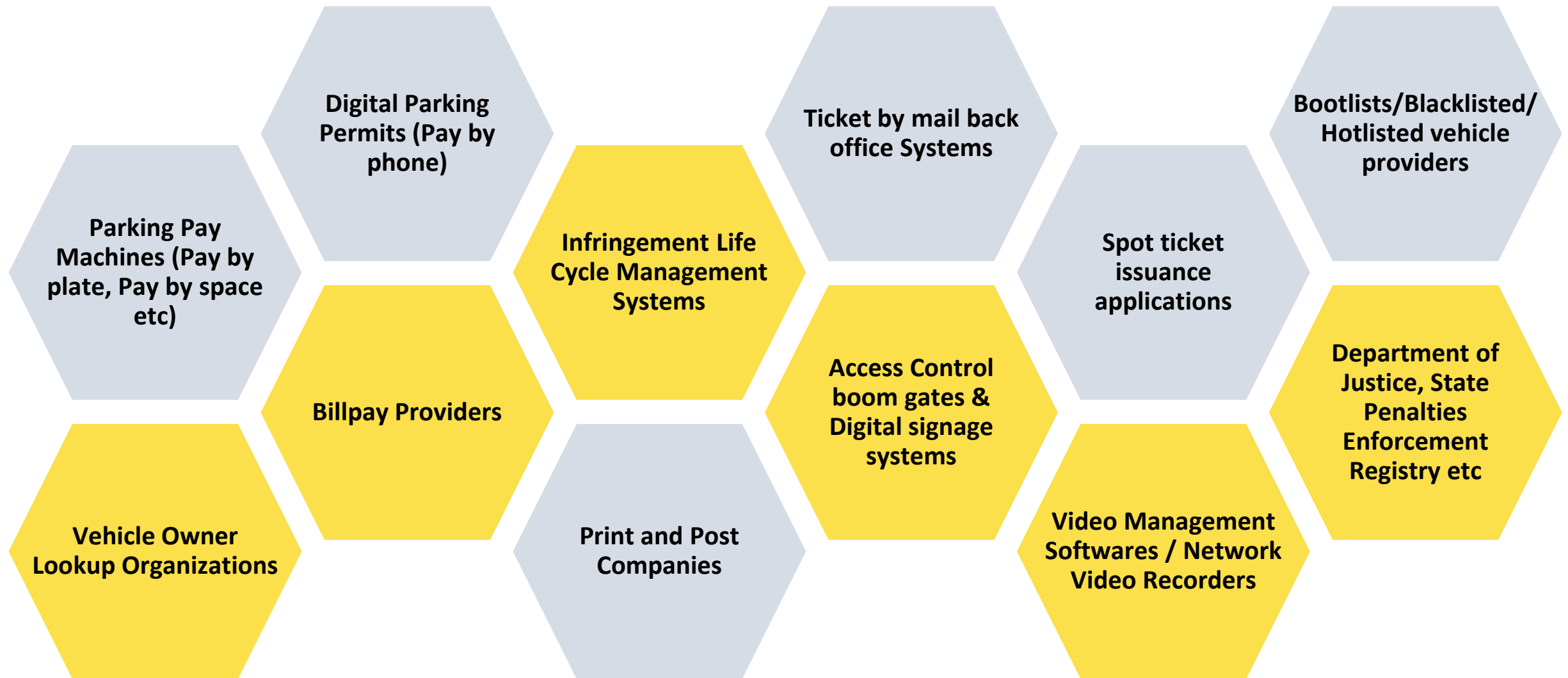
Data Security

- 3rd party SSL for RESTful services
- Public key based authentication for SFTP
- Basic Authentication and oAuth2.0 based options with short lived tokens

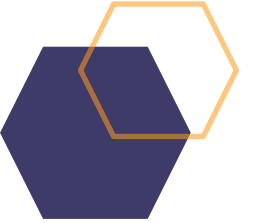
Data formats

- JSON
- XML
- WSDL (For SOAP based)
- SAML (For Single Sign On)

Key categories of integrations with SenSen systems



Thank you for your time!



Feel free to email at sales@sensen.ai for questions or clarifications!

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