PNR

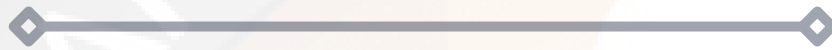## PNR Engineering
VIDEO BASED AI SOLUTIONS
2021

IT'S KNOWN THAT CCTV
TECHNOLOGY IS CURRENTLY BEING USED BY
ORGANISATIONS AS MORE
OF A DETERRENT, THAT
REVIEWS EVENTS WHEN
IT'S TOO LATE TO TAKE ACTION.
PNR ENGINEERING HAS REINVENTED THE WHEEL
BY TAKING THE TECHNOLOGY FROM BEING
REACTIVE TO PROACTIVE.
SIMPLY THINK OF IT AS USING
YOUR EXISTING CCTV SYSTEM
AS EYES
AND INCLUDING OUR SYSTEMS
AS A SUPERHUMAN BRAIN,
RECOGNISING PATTERNS AND
REPORTING ABNORMAL EVENTS
FOR YOUR IMMEDIATE ACTION.

CURRENT PROBLEM

The top three most significant challenges companies face when considering the implementation of AI are staff skills (56%), the fear of the unknown (42%), and finding a starting point (26%). PNR engineering has designed a solution that is sensitive to the unique requirements of each setting. We have worked with numerous industry consultants to design solutions that support your staff and optimise expenditure. Swift to commission and cheaper than manual monitoring solutions, our systems enable your CCTV to actively support your business in several areas including compliance, security, and business development. This end-to-end solution increases the efficiency of your services. We can integrate our solution with your existing resources to create a seamless risk mitigation strategy. PNR engineering systems are created with different algorithms to eliminate redundant work, reduce overheads and enhance process efficiencies. Our solutions offer a wide range of capabilities. We can swiftly develop additional monitoring protocols that you may require.

Powered by Ai

PRODUCTS & SERVICES
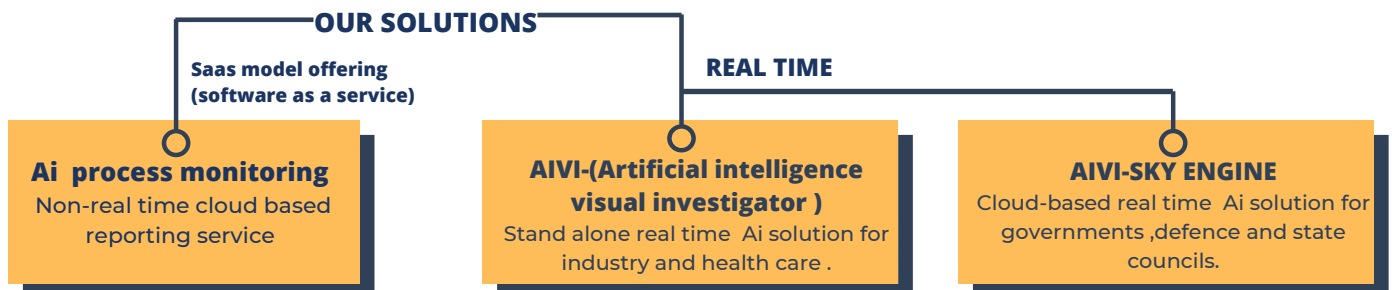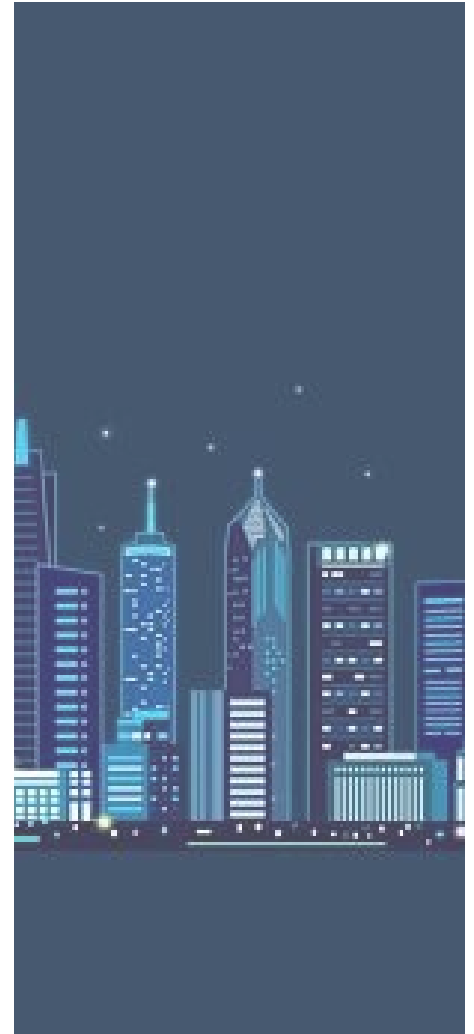
PRODUCTS AND SERVICES

The goal is to process your CCTV footage to recognise predefined or undesirable events rapidly and it's here that the PNR engineering stands unchallenged. Our Ai process monitoring system via our secure verification center uses a rolling baseline to learn daily while constantly establishing a 'new normal' set of behaviours so they can proactively identify the "not normal" and alert operators.

Surveillance is about prevention, but until now existing systems capture lots of the footage, and then the painstaking manual process starts. It's known that CCTV technology is currently being used by organisations as more of a deterrent, and consequently, all events are reviewed after it's too late. PNR Engineering Systems has reinvented the wheel by taking the technology from being reactive to proactive. Simply think of it as using your existing CCTV system as eyes to your business and the Ai systems as a superhuman brain, recognising patterns and reporting abnormal events for the client's immediate attention. This next-gen business process monitoring system not only identifies liabilities but most of all, lets you focus where it matters the most.

Our services are offered to all types of Industries depending on their requirements to deliver:

- Available intelligence
- Affordable intelligence
- Acceptable intelligence

Incorporating and considering all the above, our experts specifically design an Ai Solution that suits our client's requirements.

OUR SOLUTIONS

Saas model offering (software as a service)

REAL TIME

Ai process monitoring
Non-real time cloud based reporting service

AIVI-(Artificial intelligence visual investigator)
Stand alone real time Ai solution for industry and health care .

AIVI-SKY ENGINE
Cloud-based real time Ai solution for governments ,defence and state councils.

WHY ADD AI TO YOUR BUSINESS

Combining Artificial Intelligence with the business surveillance systems changes the entire scope and impact of a surveillance camera on your wall . Our products are beyond security, beyond keeping the company and its customers safe, it is also becoming a business enhancement tool. PNR Engineering Systems assists in focusing where it matters the most for greater safety, higher efficiency and greater growth.
With our technology in your business " THE RESULT "

- Increased speed of response
- Reduced impact of threats
- Improved risk profile
- Improved ROI of security
- Reduced operating costs
- Impact mitigation in events
- Safer environment

PNR Engineering Systems offers our services to all industries that require a digital security infrastructure. Our software can be combined with the existing infrastructure of our client, therefore reducing the capital cost significantly which makes this technology much more affordable. Our products are at the forefront of the market due to their uniqueness.

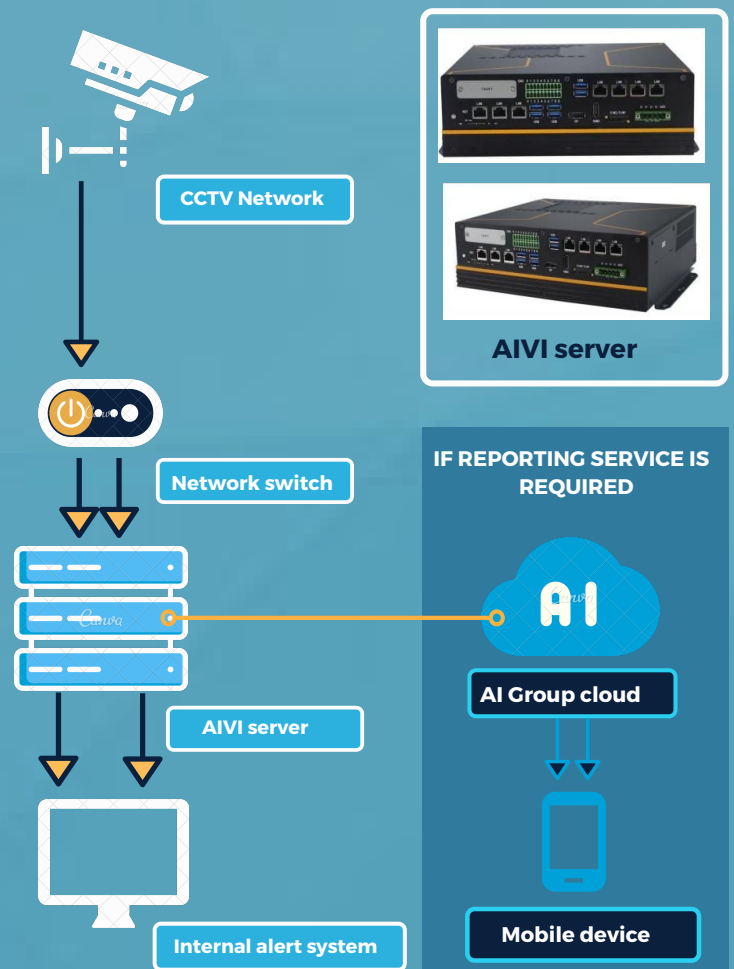| " VISUAL CONCEPT " Recognise what is seen in a video: objects, events, activities & behaviour	" FACES AND IDENTITIES " Detects individuals and groups of people and recognise identities	" HUMAN ANALYTICS " Recognise facial expression and behaviour

ARTIFICIAL INTELLIGENCE VISUAL INVESTIGATOR

AIVI is ground-breaking technology that is developed through machine learning neural network algorithms to enhance CCTV systems. In its simplest terms, it is a brain for your CCTV network to assess, investigate, alert and act as per your requirements. AIVI is a plug and play devise that supports both local in-house deployments and provides fast access to front-end equipment for visual AI analysis. In addition to supporting smart big screen application layer, it can also provide APIs to support third-party platform access.

ARTIFICIAL INTELLIGENCE
VISUAL INVESTIGATOR

SYSTEM ARCHITECTURE

CCTV Network

AIVI server

Network switch

AIVI server

IF REPORTING SERVICE IS REQUIRED

AI Group cloud

Internal alert system

Mobile device

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The need for a proactive solution in the global construction sector to effectively utilise funds /assets and supplies in order to improve operations for better conditions are ever being researched and studied. The significance of video-based data has become an important part of this initiative due to its inherent capabilities and real-time characteristics. However, in terms of surveillance video, there are thousands of cameras in the industry which are mainly viewed by human eyes thus consuming a lot of manpower. There is no doubt that it is far more impossible to monitor all videos, and difficult to record, resulting in low efficiency in resources deployed. Therefore, how to make use of video data to application scenarios in the construction industry is a vital concern. To address this concern in the industry, PNR engineering has developed AIVI construction.

AIVI construction has the ability to monitor processes and abnormal behaviour in real time on site. This technology can monitor and track process-related concerns, dynamics of workers /vehicles, building materials, construction equipment etc. It uses methods such as target detection and positioning, behaviour assessment and analysis to monitor and implement procedures such as dangerous object placement warning, health and safety concerns, process productivity maximisation, warning of dangerous behaviour, etc. The system can be worked for 24 hours to carry out comprehensive monitoring and reporting, to ensure the increase in productivity and safety of life and property

AIVI-CONSTRUCTION

FEATURES

A video algorithm is used to identify vehicles parked illegally in a designated area, and the license plate of the vehicle can be traced under proper conditions.

ILLEGAL PARKING

Recognise piled materials in the hazardous area by video algorithm and report the specific location

STOCKPILE

AIVI construction can identify uncovered dirt vehicles ,the license plate and body colour information can also be registered and alerted under proper conditions.

UNCOVERED DIRT VEHICLES

Recognise the number of people in the allocated production workshop through video algorithms and report overrun situations.

NUMBER OF PEOPLE OVERRUN IDENTIFICATION

Recognise vehicles in specified areas by video algorithms, and report license plates when applicable. At the same time, verification of the driver can be processed through real-time uploaded identity information (including photos) and the real-time captured face (1: 1 verification).

CHECK-IN OF VEHICLES

Fire in operation sites and production workshops can be identified through video algorithms. These incidents could be immediately reported and alerted in real time for prompt action.

OPEN FLAME RECOGNITION

A video algorithm is used to identify whether workers in the construction area are wearing hard hats, then alert workers who are not wearing them.

HARD HAT DETECTION

Through video analysis combined with artificial intelligent recognition algorithms, outlined sensitive areas can be monitored in real time. Workers intrusive behaviours in these areas are detected and alarmed.
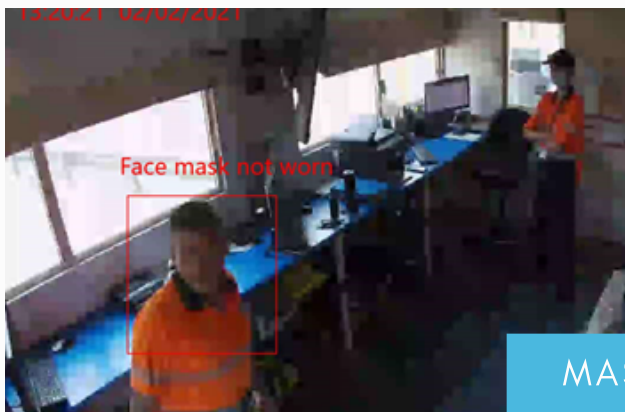

RESTRICTED AREA BREAK-IN ALARM

Detect the on-the-job situation of indoor personnel through video algorithm.
If there is no off-site situation for a long time, report the alarm

OUT-OF-POST DETECTION

The uncovered bare soil on construction site can be identified through a video algorithm. AiVi can be programmed to alert if the uncovered soil is exceeding a specific amount of area.
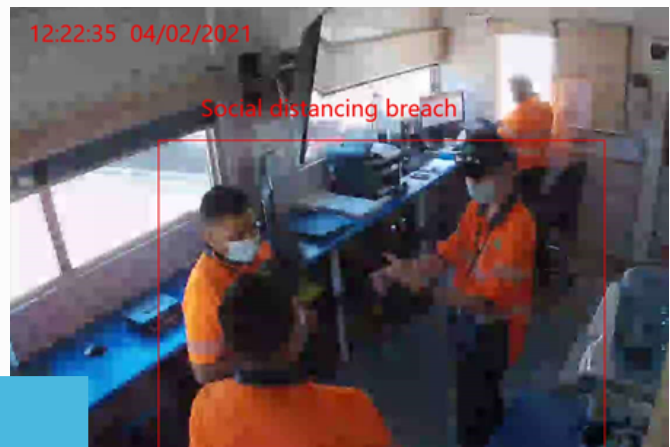

UNCOVERED LAND DETECTION

During the covid 19 crisis , governments mandated the wearing of face mask and social distancing in all indoor and outdoor venues. This algorithm is designed to detect individuals who are not following the national health guidelines
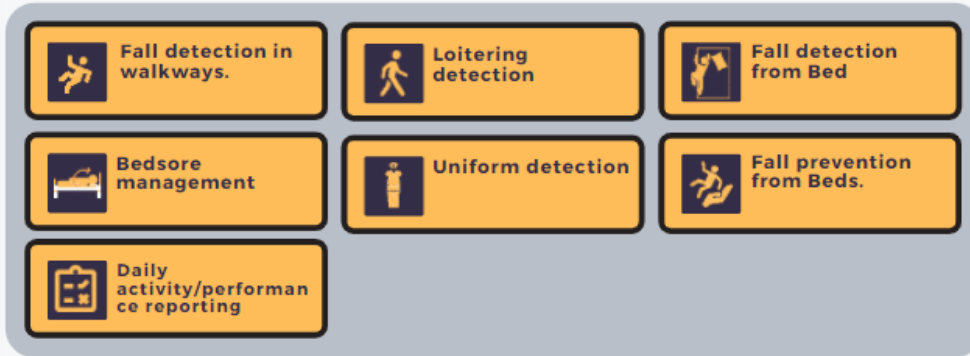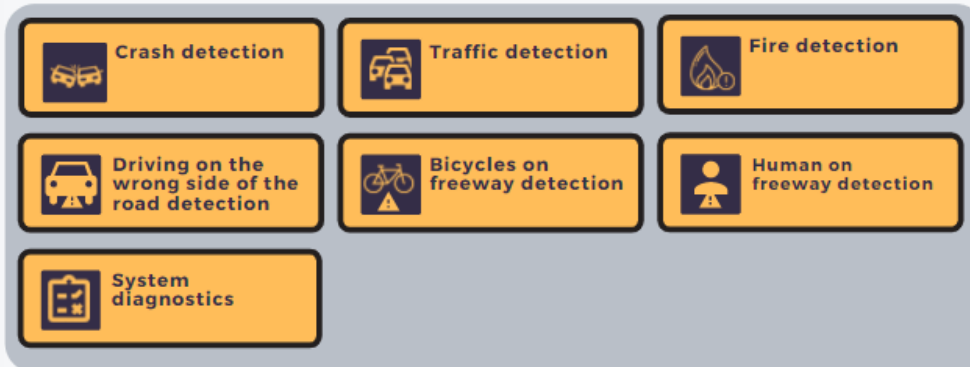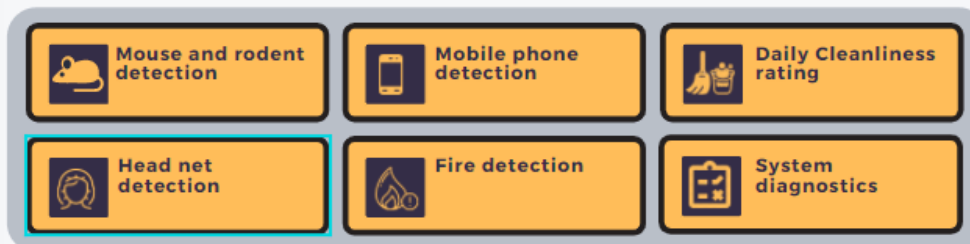
MASK DETECTION
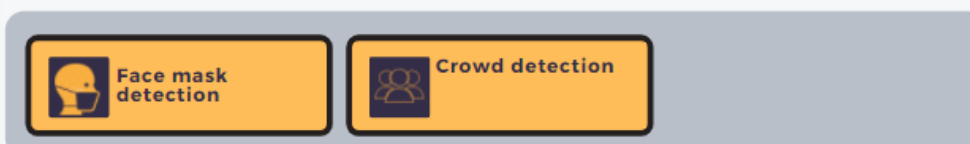
SOCIAL DISTANCING PROTOCOL

AGED CARE/ HOSPITALS

- Fall detection in walkways.
- Loitering detection
- Fall detection from Bed
- Bedsore management
- Uniform detection
- Fall prevention from Beds.
- Daily activity/performance reporting

TRAFFIC

- Crash detection
- Traffic detection
- Fire detection
- Driving on the wrong side of the road detection
- Bicycles on freeway detection
- Human on freeway detection
- System diagnostics

HOTELS /RESTAURANTS/ FAST FOOD

- Mouse and rodent detection
- Mobile phone detection
- Daily Cleanliness rating
- Head net detection
- Fire detection
- System diagnostics

MINING/ MANUFACTURING

- Ground covering detection
- Uniform detection
- Smoking in restricted area detection
- Truck back load covering detection.
- Fire detection
- System diagnostics
- Safety hard hat detection
- Safety reflective vest detection
- Crowd detection
- Personnel absent from designated work area

COVID- 19

- Face mask detection
- Crowd detection

AVAILABLE APPLICATION BASED ALGORITHMS

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The health sector is one of the largest growing industries globally, with an expected growth of 13% in the next 5 years. This is mainly due to the increase in the global aging population rate. In many health care facilities caring for the elders is a challenging task. To monitor their behavioural movement to ensure they are safe, or to give immediate medical assistance in an emergency is crucial. By combining artificial intelligence to this industry these tasks are now simpler to manage than before. PNR Engineering AIVI -CARE assists caretakers to monitor their patients and residents by helping them to provide immediate assistance when required in real time.

With current existing systems, duty personnel need to scan multiple screens or do periodic physical visits to monitor critical issues within aged care or Hospital facilities. These issues need to be manually scanned across wards to identify and rectify critical needs for assistance .PNR Engineering AIVI-CARE AI algorithms are specifically designed to detect these critical incidents in real time by alerting health care officials in a single console. AIVI -CARE has now taken out human error and the manual labour element out of this process which intern reduces cross contamination, increases efficiency and the level of care given to each resident.

AIVI-CARE

FEATURES

AIVI Care monitors residents at increased risk of falls due to various medical conditions. When they attempt to get out of bed or walk to the bathroom without assistance, care givers can be alerted with the aim of averting a fall from happening.
Reactive fall management: Whilst not all falls can be prevented, in instances where a fall has occurred, care givers can also be alerted in real time so nursing assistance can be rendered quickly.

PROACTIVE FALL MANAGEMENT –

AIVI-CARE can facilitate Just-In-Time assistance to provide proactive care. Our system will alert nursing and security staff immediately when residents and patients need help. All data is recorded in a structured manner for training and evidential purposes.

JUST IN TIME ASSISTANCE

Loitering / wandering is a common issue in most aged care facilities. Residents suffering from various forms of dementia can lose orientation to time, place or person or forget the purpose of their activity. AIVI – Care can assist in detecting residents who are wandering within certain areas of the facility at specified times of the day or night and alert staff accordingly.
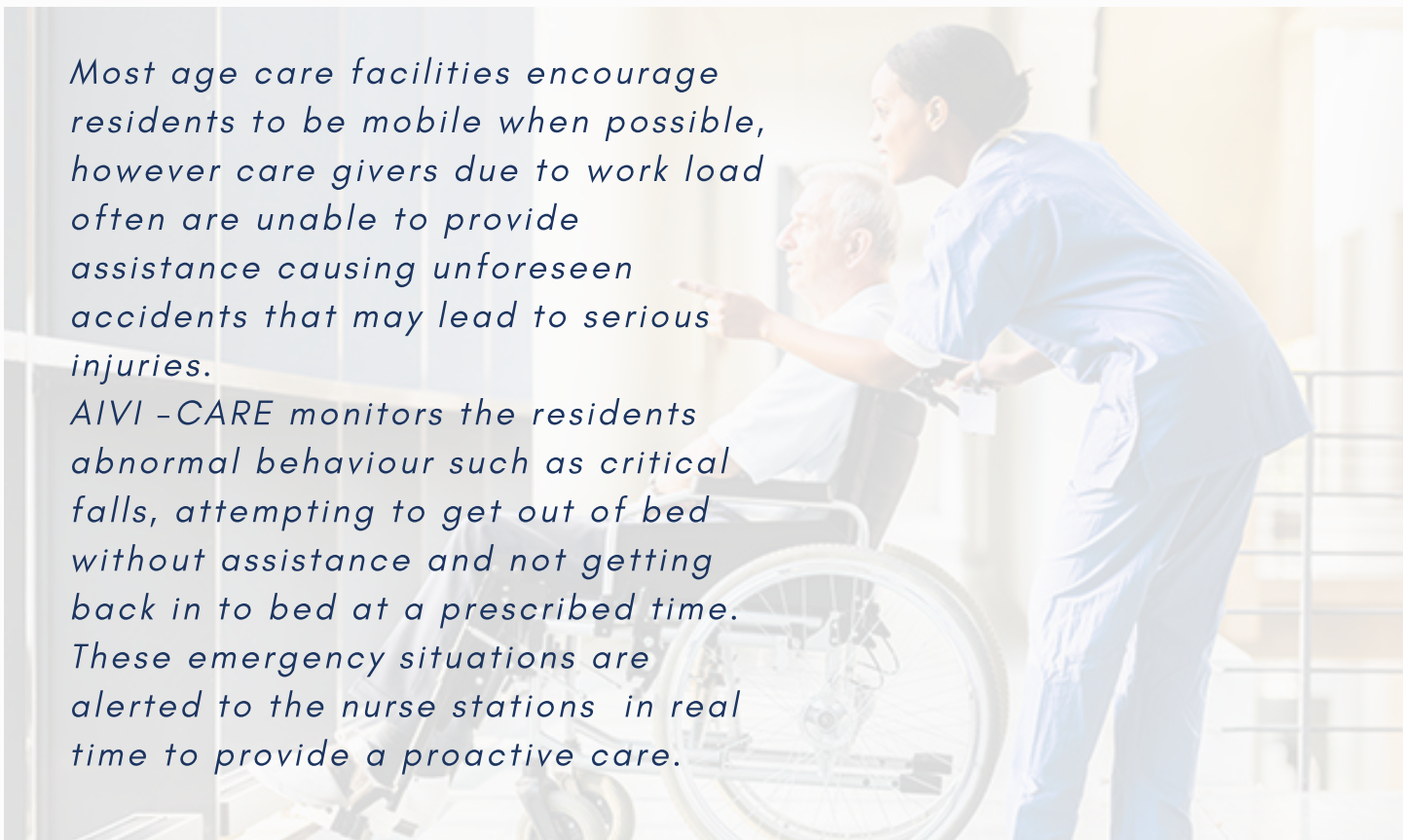
LOITERING DETECTION

AIVI – Care can assist in reminding care givers to provide special care to bedridden or immobile residents. Using AI to mitigate the occurrence of bed sores or pressure areas is an excellent example of how technology can improve the level of care and comfort of residents.

BED SORE PREVENTION

Most age care facilities encourage residents to be mobile when possible, however care givers due to work load often are unable to provide assistance causing unforeseen accidents that may lead to serious injuries.
AIVI –CARE monitors the residents abnormal behaviour such as critical falls, attempting to get out of bed without assistance and not getting back in to bed at a prescribed time. These emergency situations are alerted to the nurse stations in real time to provide a proactive care.
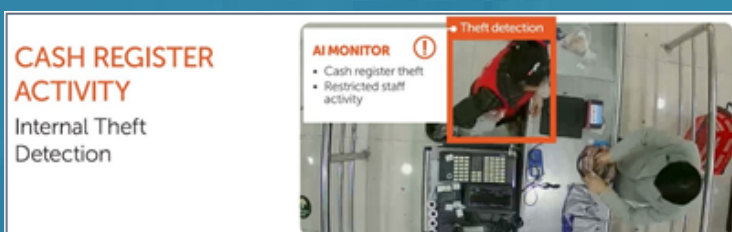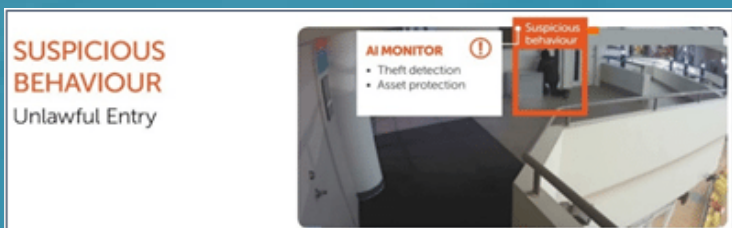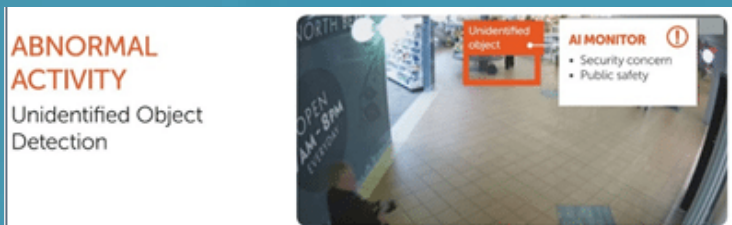
AI PROCESS MONITORING

SAAS MODEL OFFERING (SOFTWARE AS A SERVICE)

PNR Engineering offers SaaS business solutions. Following are example processes monitored

ABNORMAL ACTIVITY
Unidentified Object Detection

HEALTH AND SAFETY PROCEDURE
Food Processing Plant

SUSPICIOUS BEHAVIOUR
Unlawful Entry

ABNORMAL BEHAVIOUR
Safety and Security Hazard Detection

CASH REGISTER ACTIVITY
Internal Theft Detection

HOW THE SYSTEM WORKS

The video capturing Ai servers from our Australian based control room extracts video content from clients existing CCTV systems on site and processes those images through our Ai machine deep learning servers. This process identifies abnormal events and behaviour.

⌄

Control room officers verify such Ai filtered events that fit our client's criteria and are then able to forward them via a customised app.

⌄

100% accurate event reports with corresponding video tags are sent to our client

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AVAILABLE APPLICATION BASED ALGORITHMS
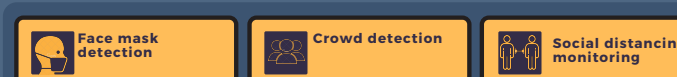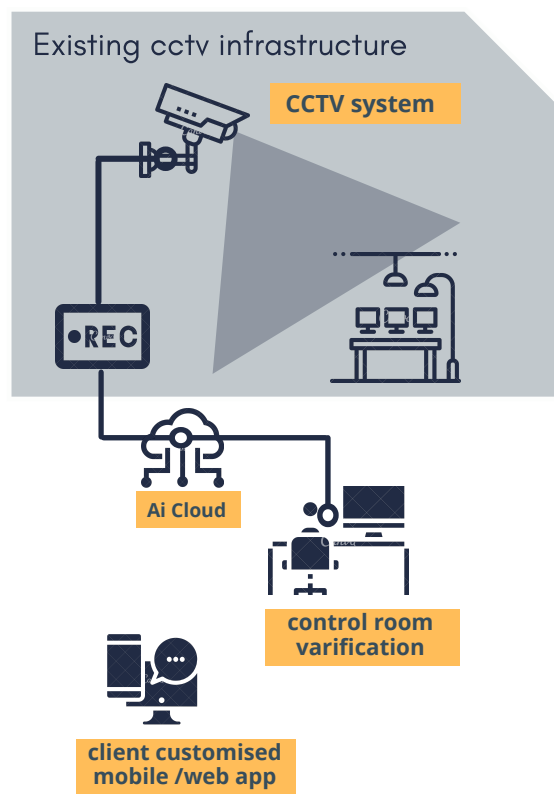
RESTAURANT

- Food contamination.
- Health and safety
- Contractor and Staff protocol/KPI monitoring.
- Staff productivity
- Uniform detection
- Internal/External theft.
- System diagnostics
- Hazard detection
- Asset misuse

RETAIL

- Customer satisfaction level monitoring
- Health and safety.
- Contractor and Staff protocol/KPI monitoring.
- Staff productivity
- Uniform detection
- Internal/External theft.
- System diagnostics
- Hazard detection
- Asset misuse

MANUFACTURING

- Hazard detection
- Uniform detection
- Smoking in restricted area detection
- Health and safety.
- Staff productivity
- System diagnostics
- Safety hard hat detection
- Safety reflective west detection
- Crowd detection

SHOPPING COMPLEX

- Hazard detection
- Uniform detection
- Car park monitoring
- Health and safety.
- Contractor protocol monitoring.
- System diagnostics
- Abnormal human behaviour monitoring.

COVID 19

- Face mask detection
- Crowd detection
- Social distancing monitoring

SYSTEM ARCHITECTURES

Existing cctv infrastructure

CCTV system

•REC

Ai Cloud

control room varification

client customised mobile /web app
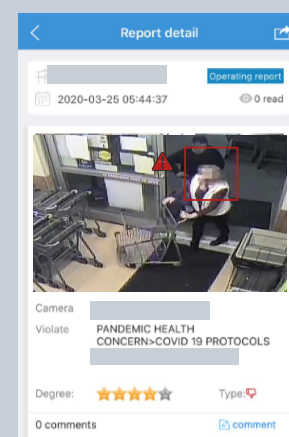
All Ai reporting services are highly accurate. Visual-based filtered and verified reports on actionable events can be viewed through a customised web portal or a mobile app.
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Report detail

2020-03-25 05:44:37

Camera

Violate: PANDEMIC HEALTH CONCERN>COVID 19 PROTOCOLS

Degree: ★★★★★   Type:

0 comments   comment

App interface

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PNR Engineering

contact us

PNR Engineering Systems Pte Ltd
35 Tannery Rd, #11-10 Tannery Block
Ruby Industrial Complex
Singapore 347740

o : +65 6742 8911
f : +65 6742 8700
E: sales@pnr-engineering.com.sg
W: pnr-engineering.com.sg

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