

**NEC**

NEC Solutions Asia Pacific Pte. Ltd.



SmartCatch™ 2.5

Industry's Most Accurate,  
Comprehensive &  
Versatile Intelligent Video  
Surveillance Solution

## PRODUCT OVERVIEW

Security and safety are major concerns facing all organizations today. In response, millions of CCTV cameras have been installed worldwide to control access, secure perimeters and monitor for theft, damage or attack. These cameras are watched by busy security personnel with other duties to perform, recorded for later review or even completely unattended. This reactive, after-the-fact approach cannot deliver the level of effective real-time security needed today.

Vidient SmartCatch provides the most comprehensive, accurate, and advanced intelligent video surveillance software available today. With true behavior recognition capabilities, SmartCatch can detect suspicious behaviors that threaten safety and security in real-time, alerting the appropriate security staff for effective and efficient response. By using state-of-the-art machine learning, multiple object trajectory tracking and human reasoning technology, SmartCatch consistently achieves the industry's highest accuracy rate, eliminating the false alarms often caused by motion detection systems or simple object tracking solutions. A comprehensive set of behaviors is available for use both indoors and out, offering complete coverage across the entire enterprise. SmartCatch works with existing CCTV cameras and can be easily integrated with other security systems such as access control, biometrics and RFID.

## KEY BENEFITS

### Automated Real-Time Video Monitoring

- Monitors, analyzes and interprets video in real time, alerting appropriate security staff via a variety of methods when specific behaviors that threaten safety and security are detected.

### Accurate Detection Of Security Violations

- SmartCatch accurately detects specific behaviors that violate security policy. It works both indoors and outdoors under complex real world environments, consistently achieving the industry's highest level of accuracy.

### Policy-based Response Management

- SmartCatch can be easily configured to implement your specific policies for alert responses and escalation procedures.

### Works With Existing Surveillance Infrastructure

- SmartCatch works with all of your existing CCTV cameras and is easily integrated with other sensor and security management platforms.

### Easy To Set Up And Use

- SmartCatch is easy to configure for your specific security policies including when, where and how alerts are delivered, escalation of notification and delivery via a wide variety of communication devices. SmartCatch enables viewing of multiple cameras simultaneously, shows alert details and provides a listing of previous alerts.



The SmartCatch Alert Console provides an overall view of activities including a hierarchy of locations and cameras, listings of previous alerts by camera, location or time, and multiple camera views simultaneously.

## Available Behavior Recognition Modules

### Crowd Detection

- detects crowd size and queue length to prevent overcrowding situations

### Exit Lane

- detects people going the wrong way in single direction entrance or exit lanes

### Human Tailgating/Piggybacking

- detects multiple people tailgating or piggybacking on a single access card

### Loitering

- detects people or vehicles loitering near secure or high value areas

### Perimeter Intrusion

- detects and tracks people, vehicles, or other object intrusions into secured areas

### Removed Objects

- detects the removal of stationary objects

### Stopped Vehicle

- detects vehicles stopped near sensitive areas for a prolonged period

### Turnstile Violation

- detects people hopping over or crawling under an access gate

### Unattended Objects

- detects objects such as packages, luggage, and carts that are left unattended for a specified period of time

### Vehicle Tailgating/Piggybacking

- detects multiple vehicles tailgating or piggybacking on a single access card

SmartCatch™ provides a comprehensive set of behavior modules that detect suspicious activities indoors and out. Behavior modules can be used individually or in combinations on individual cameras or extended across thousands of cameras. Configuring behaviors to accommodate site-specific conditions such as defining areas of interest or the size of vehicles to be detected is easy to do with simple drag and draw tools, wizards and menus. More complex customizations or integrations are easily accomplished by using the SmartCatch application programming interfaces.

## CROWD DETECTION

Being able to detect growing crowd conditions can be very useful in preventing overcrowding problems. Based on a specified occupancy rate of the area, SmartCatch can accurately notify authorities to take action on overcrowding.

### Capabilities

- Indoor and outdoor usage
- Detect overcrowding based on capacity and occupancy rate
- Works in varying illumination, shadows, reflections and weather conditions

## EXIT LANE

SmartCatch Exit Lane module detects any person or object crossing a pre-defined area in the wrong direction. Any person or object that crosses the area will cause an event to be generated. SmartCatch can monitor separate warning and alarm areas providing escalating levels of alerts for each.

### Capabilities

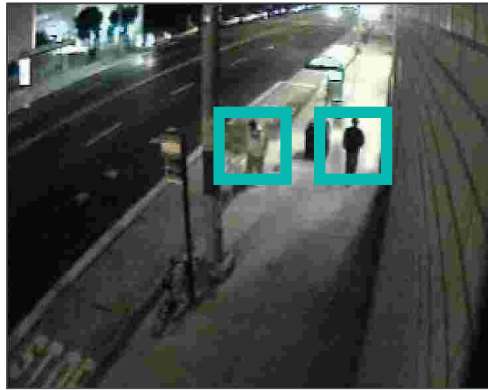
- Indoor and outdoor usage
- Detection of counter direction crossing
- Works in varying illumination, shadows, reflections and weather conditions
- Highly accurate even in crowded situations
- Security Guard recognition filter

## HUMAN TAILGATING/ PIGGYBACKING

SmartCatch detects piggybacking when two or more people move through a door or gate without the door or gate fully closing between their entries. It is designed to track unauthorized entry by piggybacking on a legal access.

### Capabilities

- Indoor and outdoor usage
- Track one or multiple humans/objects
- Works in varying illumination, shadows, reflections and weather conditions
- Accurate regardless of size, speed and number of objects or humans
- Able to synchronize with other sensors like access control for comprehensive security management



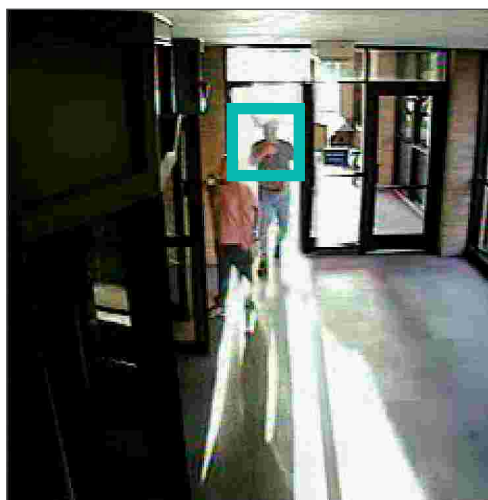
*Loitering or suspicious behavior even under low light or night-time conditions.*

## LOITERING

Loitering is used to detect people staying at an area longer than usual. The movement tracked can be running or walking. SmartCatch can individually track multiple people who may be loitering simultaneously.

### Capabilities

- Indoor or outdoor usage
- Multiple concurrent people tracked
- User configurable loitering time setting
- Works in varying illumination, shadows, reflections and weather conditions
- Up to ten areas of interest can be defined by the user



*Individuals tailgating on a single access card even in difficult lighting conditions*

Industry's most accurate,  
comprehensive &  
versatile intelligent video  
surveillance solution

### Industry's Most Accurate.

SmartCatch has consistently achieved 95%–98% accuracy in real-world installations. Using state-of-the-art machine learning, multiple object trajectory tracking, and human reasoning technology in combination, SmartCatch recognizes behaviors that threaten safety and security.

### Broad Range of Behaviors.

SmartCatch offers an extensive set of behaviors for both indoor and outdoor monitoring needs, providing comprehensive coverage across the entire enterprise.

### Comprehensive Response Management.

SmartCatch provides an Alert Response Management system that enables security personnel to respond quickly and according to specific security policy.

### Versatile.

SmartCatch can be deployed on a few cameras or on thousands of cameras across a large organization so it can grow as your needs do. It works with existing CCTV systems and can easily integrate with other sensor and security systems to provide complete situational awareness.

## PERIMETER INTRUSION

SmartCatch Perimeter Intrusion is able to detect, track and classify objects entering into the perimeter of the camera field of view. Its robust filtering feature significantly reduces background noise created by varying weather conditions.

### Capabilities

- Outdoor usage
- Detect and track object as small as four by four pixels
- Works in varying illumination, shadows, reflections and weather conditions
- Classification on people vs. vehicle, speed, and activity
- Continuous tracking even when object or person disappears and reappears in the scene due to temporary blocking



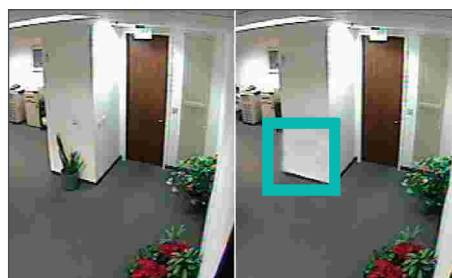
A vehicle stopped for an extended period in a sensitive location.

## REMOVED OBJECTS

SmartCatch can detect any sized object being removed from a monitored area. It is designed to protect valuables from being stolen or damaged. The monitored area can be the whole camera view or a user defined area.

### Capabilities

- Indoor and outdoor usage
- Detect any sized object even in crowded scene
- Works in varying illumination, shadows, reflections and weather conditions



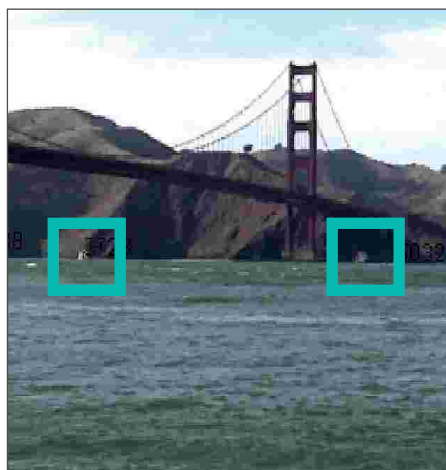
Easily identifies the removal of objects.

## STOPPED VEHICLE

Detects any sized vehicles that is stationary for longer than a specified time in the camera field of view or in a region defined in the camera view. This includes monitoring small to large vehicles such as a passenger car, moving van or truck, etc.

### Capabilities

- Outdoor usage
- Works in varying illumination, shadows, reflections and weather conditions
- Highly accurate even in crowded street
- Added flexibility to detect only certain sized vehicles



Identifying perimeter objects accurately even over water.

## TURNSTILE VIOLATION

Many access gates are controlled by turnstiles. Smartcatch can detect unauthorized entry by hopping over or crawling under these.

### Capabilities

- Indoor usage
- Works in varying illumination, shadows and reflections
- Works with mechanical or optical turnstiles
- Able to synchronize with the turnstile software for comprehensive security management



Vehicles tailgating on a single access card.

## UNATTENDED OBJECT

SmartCatch can selectively detect objects of specified sizes like boxes, luggage, etc. being placed in the monitored area for a period of time. The monitored area can be the whole camera view or a user defined area. The noise filter feature enables detection of the unattended object in a crowded area or under changing weather conditions.

### Capabilities

- Indoor and outdoor usage
- Detect any sized object even in crowded scene
- Works in varying illumination, shadows, reflections and weather conditions



Detecting an unattended object even in the crowded environment of a busy sidewalk.

## VEHICLE TAILGATING/ PIGGYBACKING

SmartCatch detects tailgating when two or more vehicles move through an access gate without it fully closing between entries. It is designed to track unauthorized entry by tailgating on a legal access. In addition, SmartCatch can detect a human tailgating a vehicle through the same access gate.

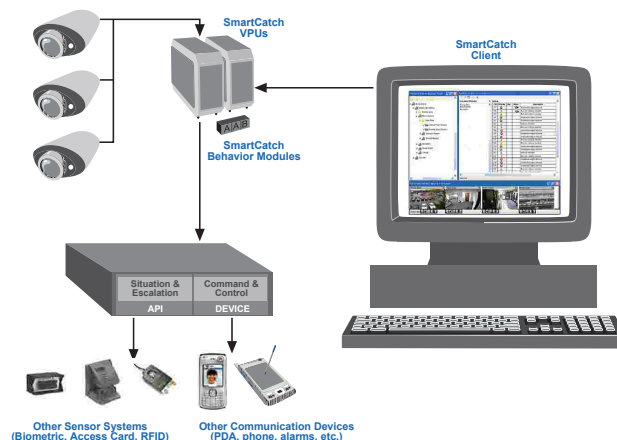
### Capabilities

- Indoor and outdoor usage
- Track one or multiple vehicles tailgating
- Track people tailgating vehicle
- Works in varying illumination, shadows, reflections and weather conditions
- Accurate regardless of size and speed of the vehicle
- Able to synchronize with other sensors like access control for comprehensive security management



## SMARTCATCH INTELLIGENT VIDEO SURVEILLANCE PLATFORM

The SmartCatch Intelligent Video Surveillance Platform provides a unique distributed architecture that is easily deployed on a few cameras or on thousands of cameras across the enterprise. Multiple behaviors are available and can run in any combination to provide comprehensive enterprise coverage. SmartCatch includes a complete set of application programming interfaces (APIs) for integration, customization of the user interface and tailoring applications. It works with existing CCTV and security infrastructures such as access control system, biometrics and RFID. Alerts are delivered in real-time to a wide variety of devices including pagers, PDAs and email. SmartCatch runs on industry standard hardware and operating systems.



## SMARTCATCH SYSTEM REQUIREMENTS

### SmartCatch Server

Operating System	Windows 2000/XP or Linux
Processor	Intel Pentium 4 3.2 GHz or higher
Memory	1 GB RAM
Hard disk	120 GB

### SmartCatch Video Processing Unit (VPU)

with Behaviors	
Operating System	Windows 2000/XP or Linux
Processor	Intel Pentium Xeon 3.02 GHz or higher
Memory	2 GB RAM
Hard disk	80 GB
Max Video Inputs	4 per VPU
Frame rate	30 fps NTSC/PAL
Camera type	Analog/Digital/IP
Max image resolution	640 x 480 at 60 Hz
4 channel PCI Video Compression Card	

## SmartCatch Features

### Video Processing Capabilities

- Multiple object recognition
- Multiple object tracking
- Day/Night calibration
- Environmental noise filtering
- Background filtering

### Video Panel

- Live video viewing of detected objects
- View multiple cameras and multiple alerts

### Scalable Expansion Capabilities

- Unlimited number of cameras
- Multiple behaviors per camera
- Unlimited number of users

### Input Sensor Support

- Access control via dry alarm contact
- API for other devices

### Pan Tilt Zoom (PTZ) Camera Control

- Direct PTZ camera to zoom into "suspicious activity"
- Only focus on user defined area of interest

### Output Alert Support

- SmartCatch Windows console
- Telephones, cell phones, PDAs, pagers
- Email and http interfaces
- Sound alarms
- API for any other device

### Alert Response Management

- Escalation can be configured for timing, contacts and priority
- Multiple users per alert
- Instant video replay
- Event location

### User Console Capabilities

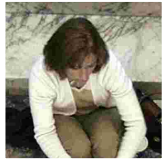
- Visualization of event status
- Display of multiple alerts in real-time
- Alerts viewed by physical location and type
- Alert status in real-time
- Manual override of alert escalation

### Administrator Capabilities

- Set up users and manage groups
- Set up alarm escalation policies
- Set up camera and alert schedules
- Easily change policies, users, groups and schedules

### Reporting

- Alert Summary Reports
- Accuracy Alert Reports
- Missed Alert Reports
- Violation Alert Reports
- Event Reports



## ABOUT NEC SOLUTIONS ASIA PACIFIC PTE LTD

NEC Solutions Asia Pacific is a wholly-owned subsidiary of NEC Corporation, one of the world's leading providers of Internet, broadband network and enterprise business solutions. NEC Solutions Asia Pacific is a leading information technology services provider with core competencies spanning the entire range of systems integration and consultancy services.

The company's suite of solutions and services covers Integrated Identity Solutions, Financial Solutions, RFID Solutions, Retail Management Solutions, Manufacturing Business Solutions, Managed Services and Business Process Outsourcing, Enterprise Resource Planning, Imaging and Workflow Solutions, Enterprise Information Portals and Knowledge Management, NECare Service Centre, Enterprise Servers, Network Solutions and Multimedia Display Products.

For more information, visit us at: [www.nec.com.sg/ap](http://www.nec.com.sg/ap)

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