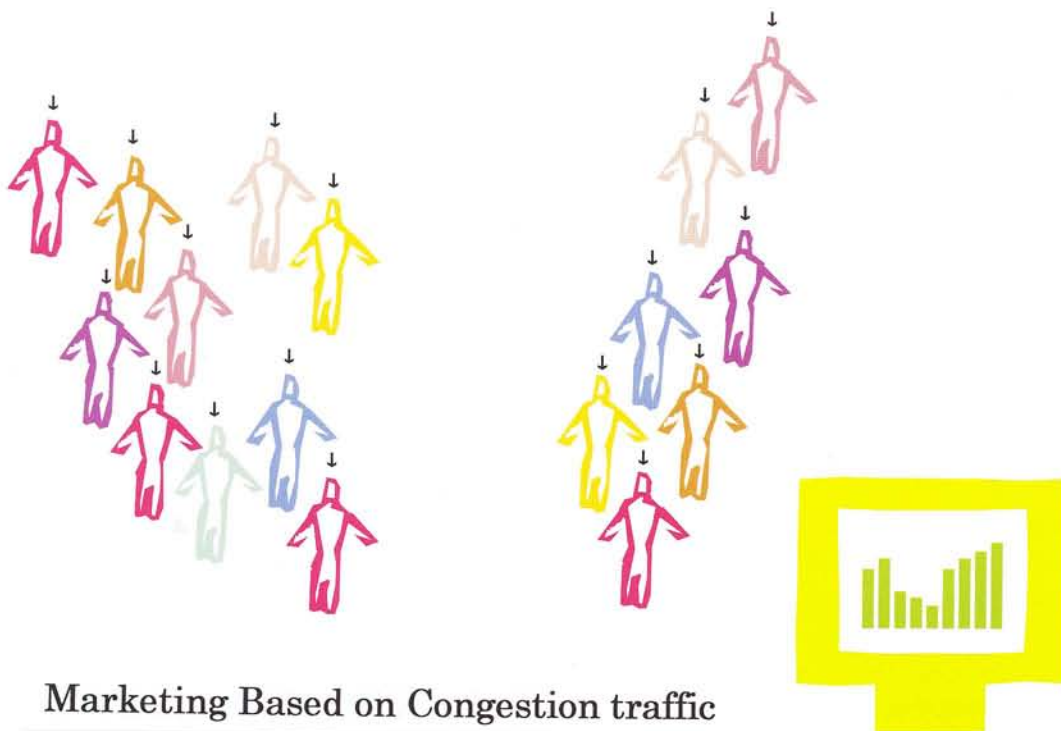


# Camera Sensing Security Solution

## Crowdedness Information Image Sensor System

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The degree of confusion image analysis



Marketing Based on Congestion traffic

Information Service to Customs and Tourists

Optimal Distribution of Personnel and Service Improvement

According to Congestion Circumstance

Sales Increase With the Congestion Relief Using Customer Guidance

Evasion of Danger Induced by Congestion

# Camera Sensing Security Solution 混雑度映像解析システム

Information Service to Customs and Tourists

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Using Customer Guidance



Evasion of Danger Induced by Congestion

## Summary of Camera Sensing Security Solution

Analysis of Image from Monitoring Camera

Real Time Indication of Congestion Circumstance of Fixed Area

Under current harsh market environment high-level marketing strategy is required in the commercial facilities. **Camera Sensing Security Solution** correctly catches the information of people's movement and offers accurate indication of congestion circumstance of the area, such as departure and entrance in department, airport, etc. Thus it becomes possible to collect quickly and manage easily. Such information is difficult or troublesome to collect in the past. Based on these information, it is possible to make better judgement on safety, facility rearrangement and service improvement etc. corresponding to the degree of estimated congestion.

### Prediction of Waiting Time in a Queue

Length of a queue is measured from the forefront to tail and estimated waiting time is shown in real time, average moving velocity is computed based on queue recognition, the movement of queue and direction.

### Risk Degree Estimate of Congestion Area.

Risk degree of congestion area is computed based on occupation rate of area, estimated number of persons and moving speed.

It applies to  
such cases:



Airport inspection gate  
ticket vending machine  
and counter etc.



ticket vending machine  
Railroad service window



Public facilities  
sidewalk bridge and escalator



sales store  
register counter



event places, entrance  
exit and ticket vending machines



bank, post office  
ATM corner

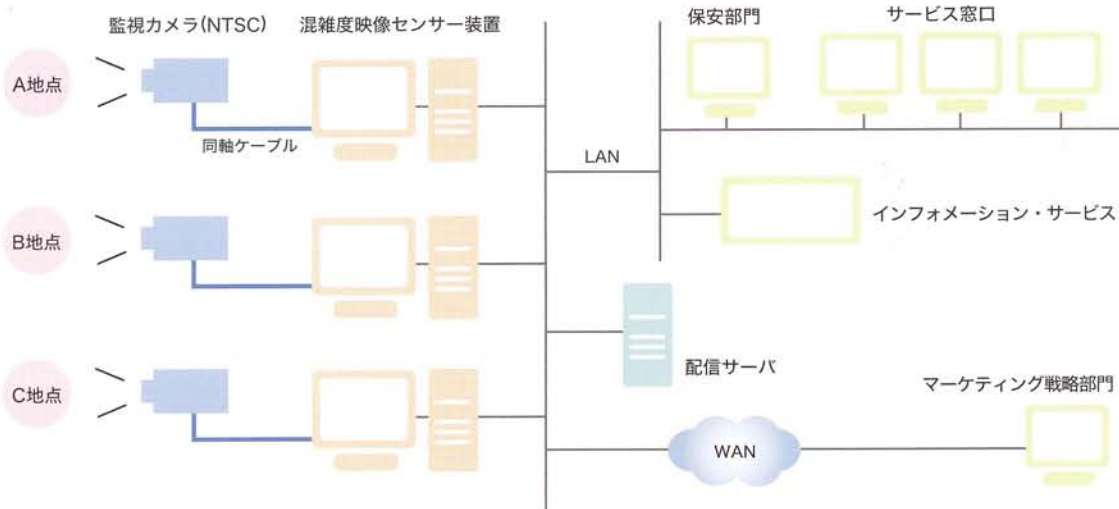


underground town  
shopping mall



## The degree of confusion image analysis

### System configuration



### Degree of Congestion Analysis

#### Circumstance Analysis

- 1) Waiting time information to the customer
- 2) Personnel and equipment reallocation based on average or individual service time of windows.

waiting time is measured from the tail of queue.

#### Congestion example

- Level 1 = free
- Level 2 = common
- Level 3 = under crowded → first time alarm
- Level 4 = crowded → second time alarm
- Level 5 = highly crowded

#### Component of System

1. Image sensor device
2. Supervisory camera (NTSC)
3. Annunciation (danger signal)
4. Indicator of waiting time.



Degree of congestion per time slot is shown with graph.

Distorted meandering queue can be measured.



not react to moving or passing person and baggage.

## Furthermore combination with IBS Counter

Detail market analysis by the day, week and month.

Circumstance Analysis:

1. Counting number of people at entrances and depart
2. Staying person number management etc. per time



Example

- 1) Counting by day and month in fixed area -> sales planning
- 2) Average staying time, average persons at store

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