

13th Asia-Pacific Eco-Business Forum in FUJITSU Kawasaki

shaping tomorrow with you

Session 2 Future Eco Cities Session

Challenge to Environment Monitoring using AI Technology

16 Feb 2017

Norio YABE

Technical Computing Solutions Unit

FUJITSU LIMITED

- Technical Computing Solutions to Eco-City
- Experiences of Environment Monitoring and Data Management Project
- Challenge to Citywide Environment Monitoring using AI-Technology



Our products and services



Technology Solutions

Services



Our datacenters in the world

Systems platform



FUJITSU Supercomputer
PRIMEHPC FX10



FUJITSU Server
PRIMERGY



FUJITSU Storage
ETERNUS

Ubiquitous Product Solutions



FUJITSU PC
LIFEBOOK

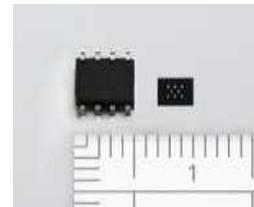


FUJITSU Tablet
arrows



FUJITSU
UBIQUITOUSWARE
vital sign sensing
bands

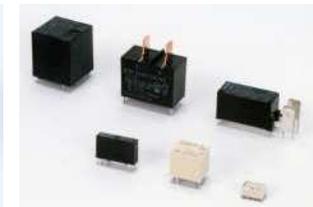
Device solutions



MB85RS1MT
1Mbit FRAM in very
small package for
wearable devices



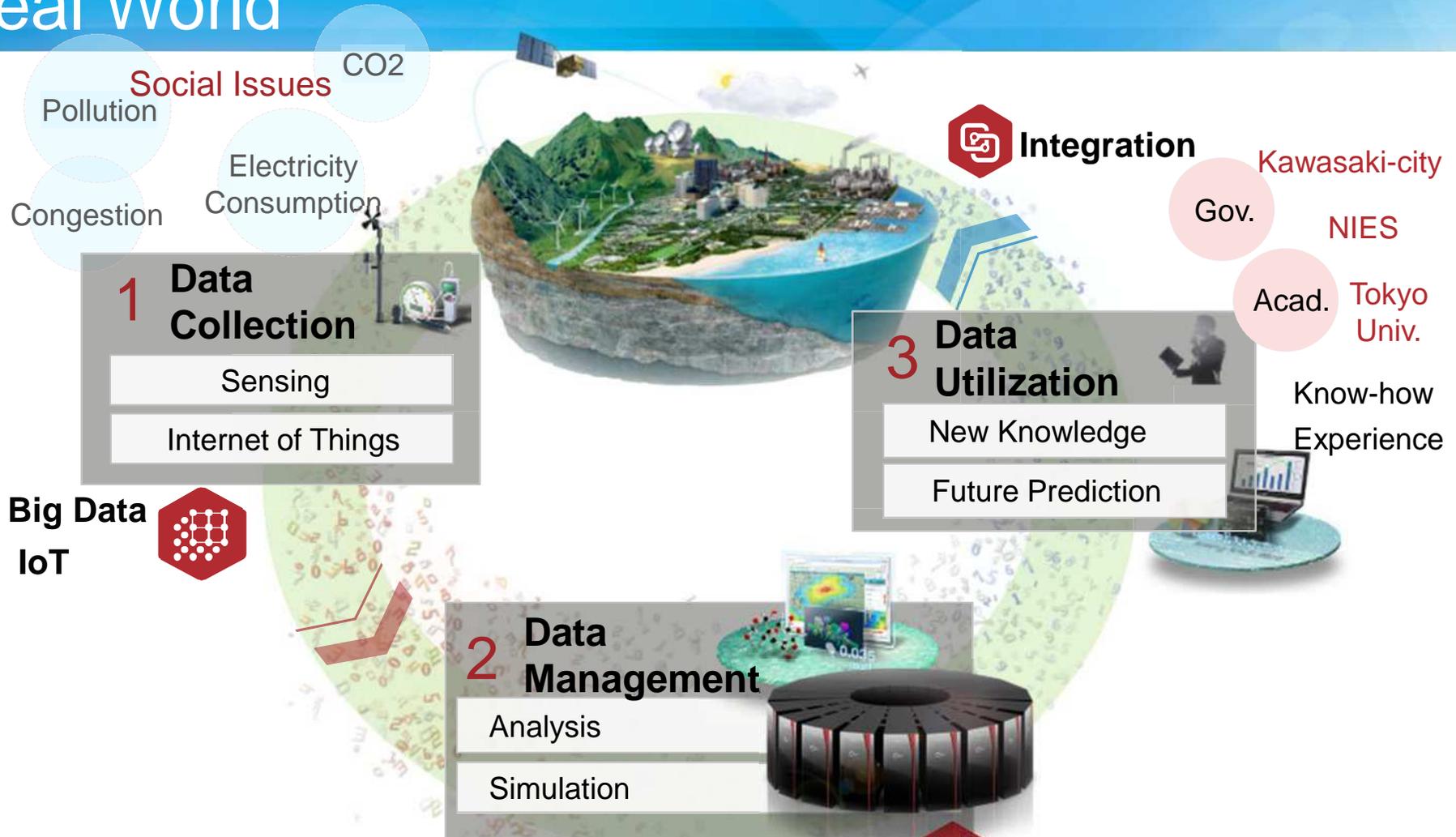
High speed printing
thermal printer
FTP-62HMCL153



Relay lineup

Roles of Global Enterprise for Eco-city

Real World



HPC / Digital Platform

Cloud Computing

Virtual World

Various Data

Data Integration

Fields in Technical Computing



Supercomputing



High Performance Computing



Engineering



Meteorology



Astronomy



Space



Environment & Disaster Mitigation



New Initiatives

Experiences of Environment Monitoring and Data Management Project



Environmental Solutions Summary



Fujitsu offers a “one-stop solution“ and customizes it according to your unique environmental objectives and challenges.



**Application
Solution**

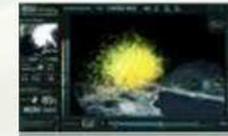
1 Environ Monitoring



2 Environ Mobile Communication



3 Environ Modelling / Simulation



4 Energy Management Dashboard



**Platform
Solution**

5 “Super Green” Products

Data Centers, Servers

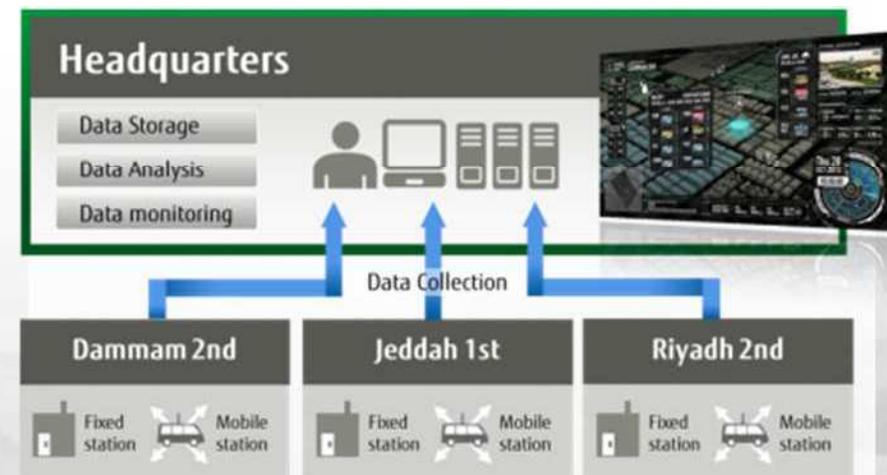


Case(1) Eco Industrial City in KSA

Integrated Environmental Management System

Client: Saudi Industrial Property Authority (MODON)
Saudi Arabia

- Integrated air and water monitoring for 3 major industrial cities
- Onsite measurement for proper factory control
- Consultation for environmental improvement and strategic planning
- Knowledge transfer & training



Case(3) Toward Low Carbon Society in Indonesia

Energy Monitoring Dashboard for Demand side

Client: National Institute for Environmental Studies, Japan



- Energy use monitoring at various types of facilities in the city
- Human activity monitoring to improve energy efficiency
- Demand-side energy mgmt. for JCM*

*JCM...Joint Crediting Mechanism



Challenge to Citywide Monitoring using AI-Technology



Dramatic Changes Surrounding Society & Business



AI

- Deep Learning
- Machine Learning



HPC

- GPU
- Cloud
- Parallel Processing



Data Analytics

- Image Analysis / Search
- Simulation
- Optimization

“Citywide Surveillance’ makes the invisible, visible.”

Using AI, Fujitsu can visualize & optimize an entire city.

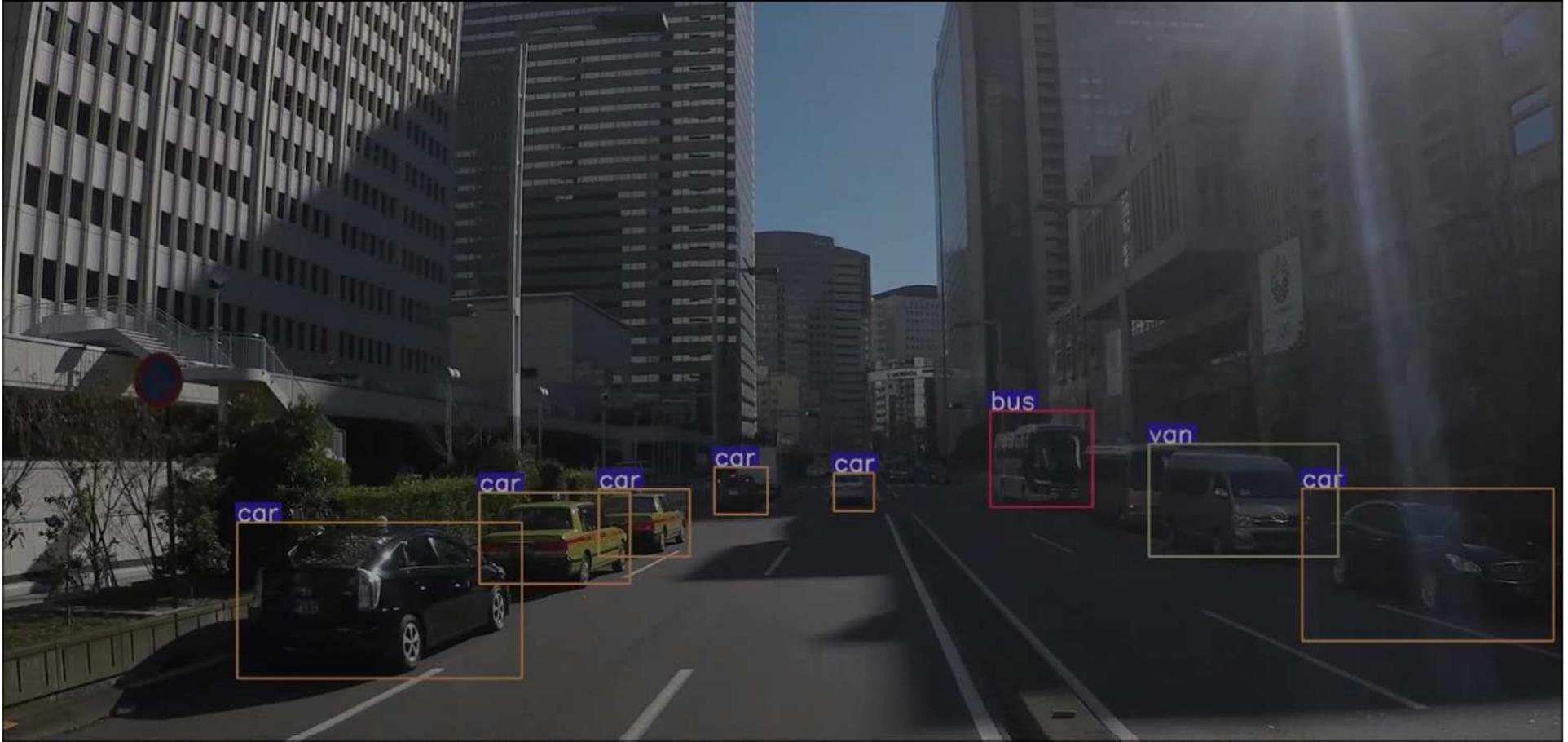
If we use Fujitsu AI in various contexts, we can truly utilize the power of innovation. >>

(and you will be taking the next step into a new world of business/service.)



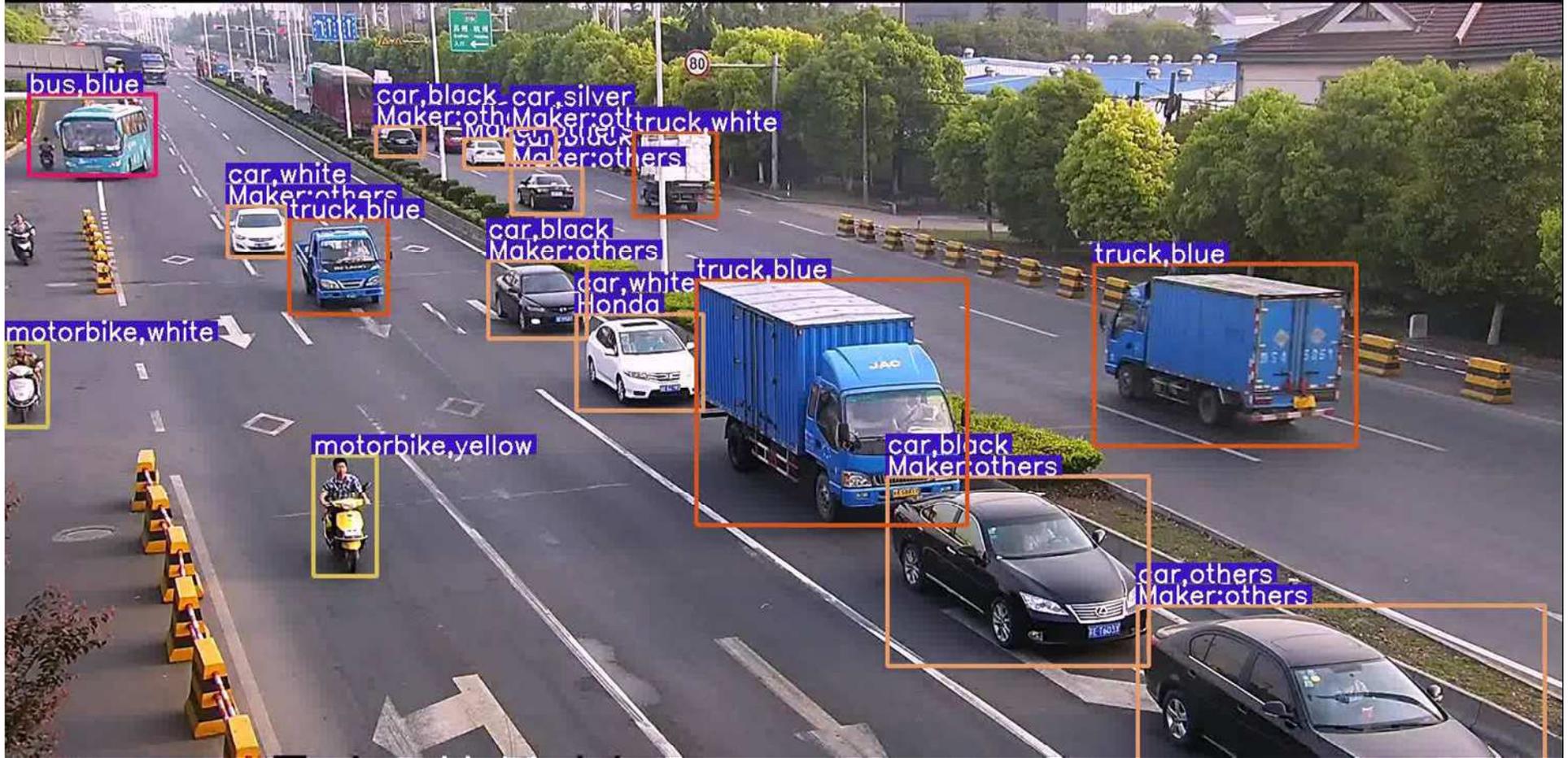


Vehicle Type Recognition





Vehicle Model Recognition





Smart Parking



AI-based Citywide Surveillance Solution



 **Vehicle**

- Parking Occupancy
- Illegal Parking / Accidents
- Vehicle Type / Model / Color

 **People**

- People Count / Flow
- Suspicious Behavior
- Person Tracking

 **Object**

- Unattended Objects
- Data from IoT Sensors



Targets & Potential Use Cases



 **Security** Airport / Police

- Specific Person Search
- Anomaly Detection
- Facial Recognition



 **Smart City / Big Event**

- Illegal /Overtime Parking Detection
- People-flow Detection
- Smart Parking



 **Retail** Shopping Mall / Gas Station

- Detention Time Detection
- Vehicles & People Counter / Identification



 **Industrial Zone**

- Theft Monitoring
- Facial Recognition



 **Transportation**

- Congestion Detection
- Traffic Monitoring / Counting
- LPR



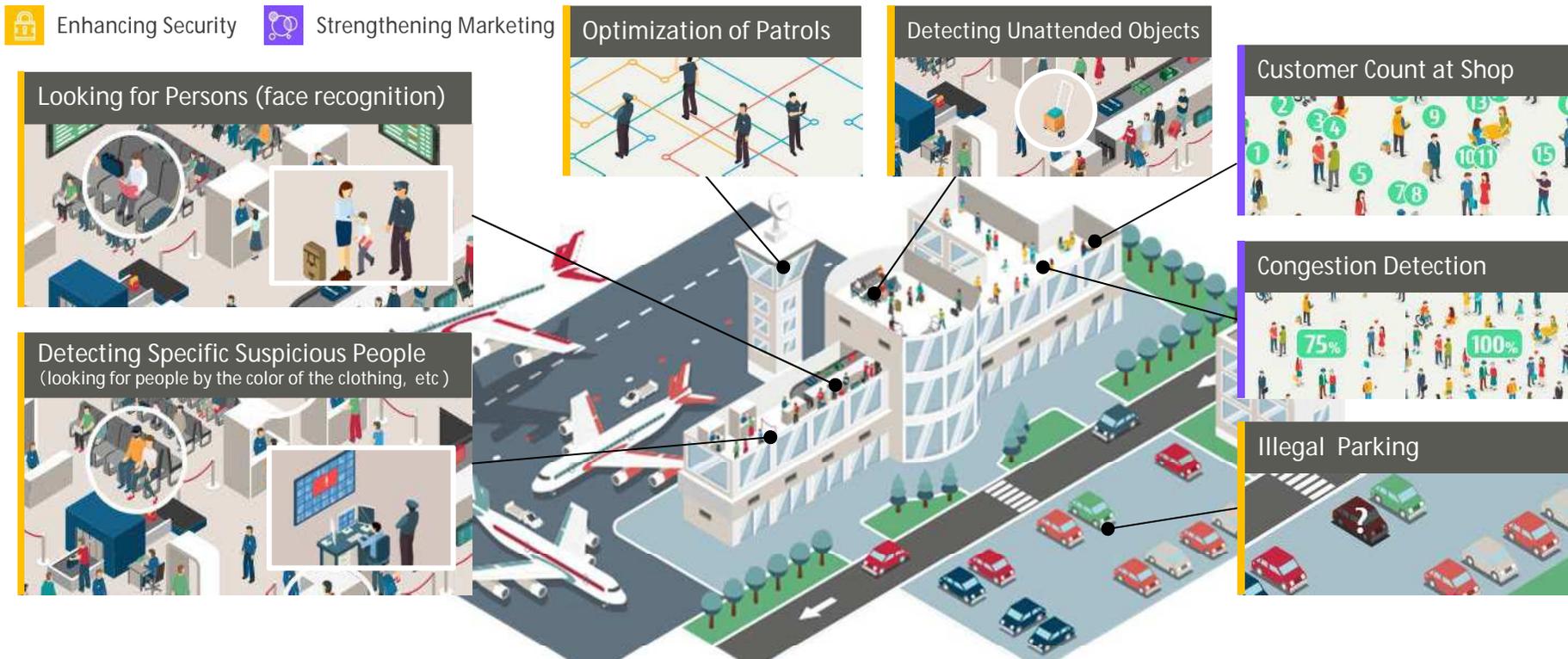
 **Disaster Management**

- Water Level Monitoring

Potential Use Case : At Indoor Facility (Airport / Shopping Mall)



By using a video analysis solution at an indoor facility, we can enhance security by finding people or detecting specific suspicious persons, and more. For marketing and optimal facility management, we can provide a variety of pertinent information about visitors; including the "flow" of people, "time tracing," turnover rate, etc.



At Fujitsu,
we are realizing tomorrow's security and convenience
through making state-of-the-art ICT infrastructures.

Services Focused on
Safety and Peace-of-Mind



Citywide
Surveillance



Smart
Parking

Effective Data Use
and ICT Infrastructure



Environment &
Energy
Management



Emergency
Management



Traffic
Information
Management

Video Delivery
Technology

Mobility
Technology

Wide Area Sensing
Technology

Digital Signage
Technology

Integrated ID
Authentication Technology

Data Analysis
Technology



In order to create new value
from information, we offer:

Data Fusion

Modelling

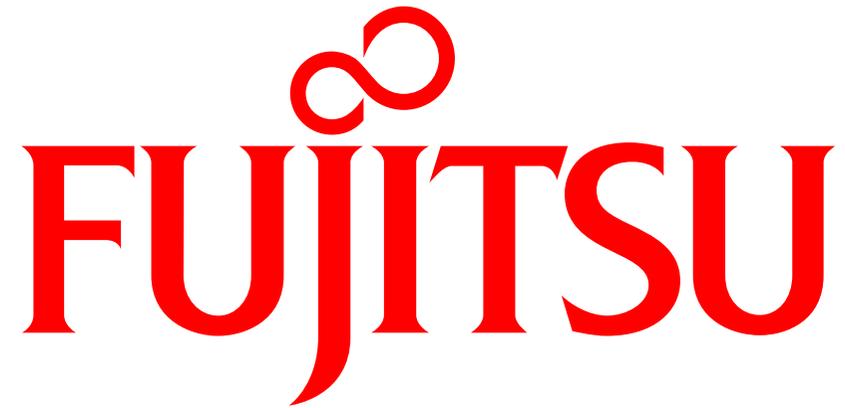
Simulation

Big Data

AI

Cloud

HPC



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