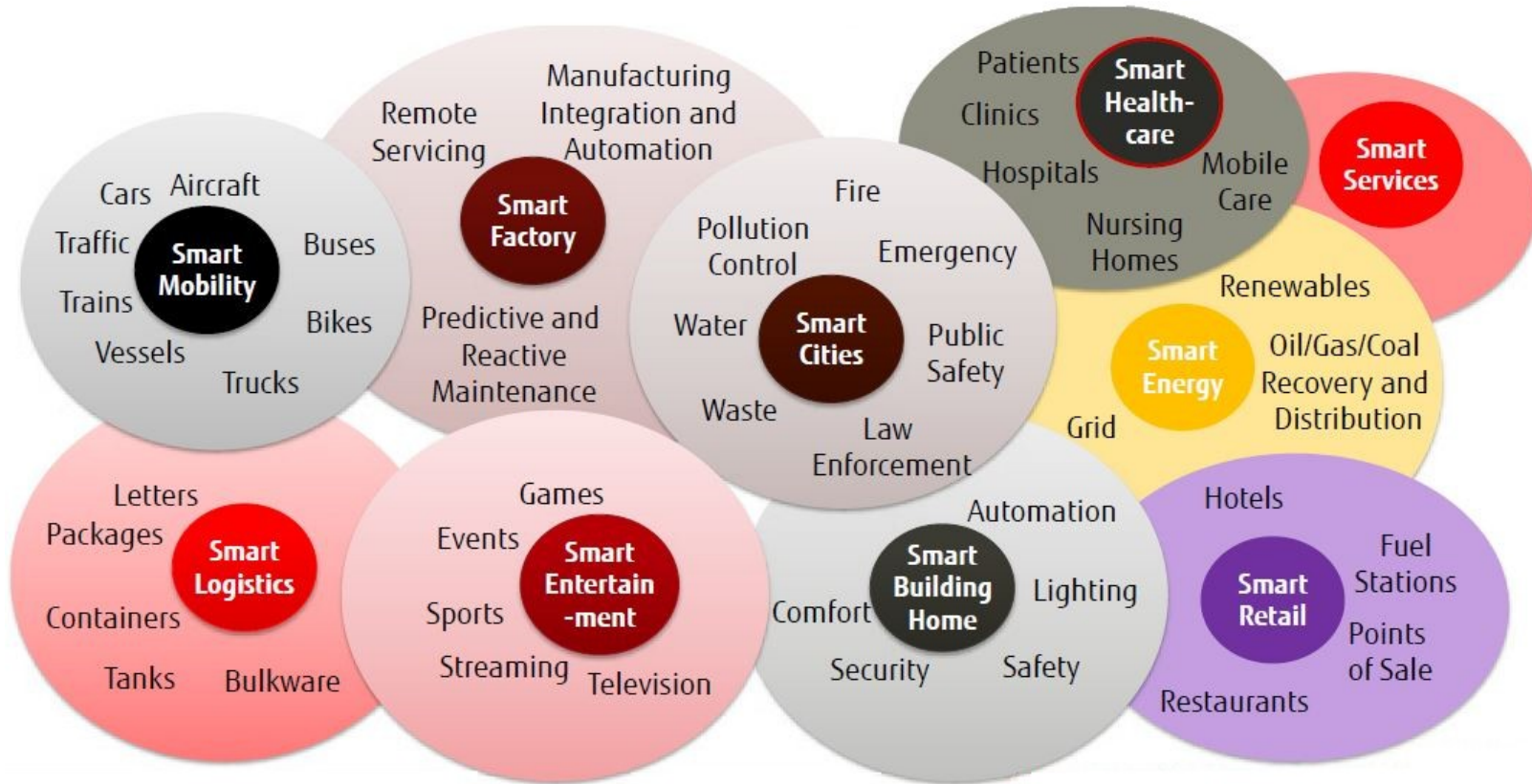


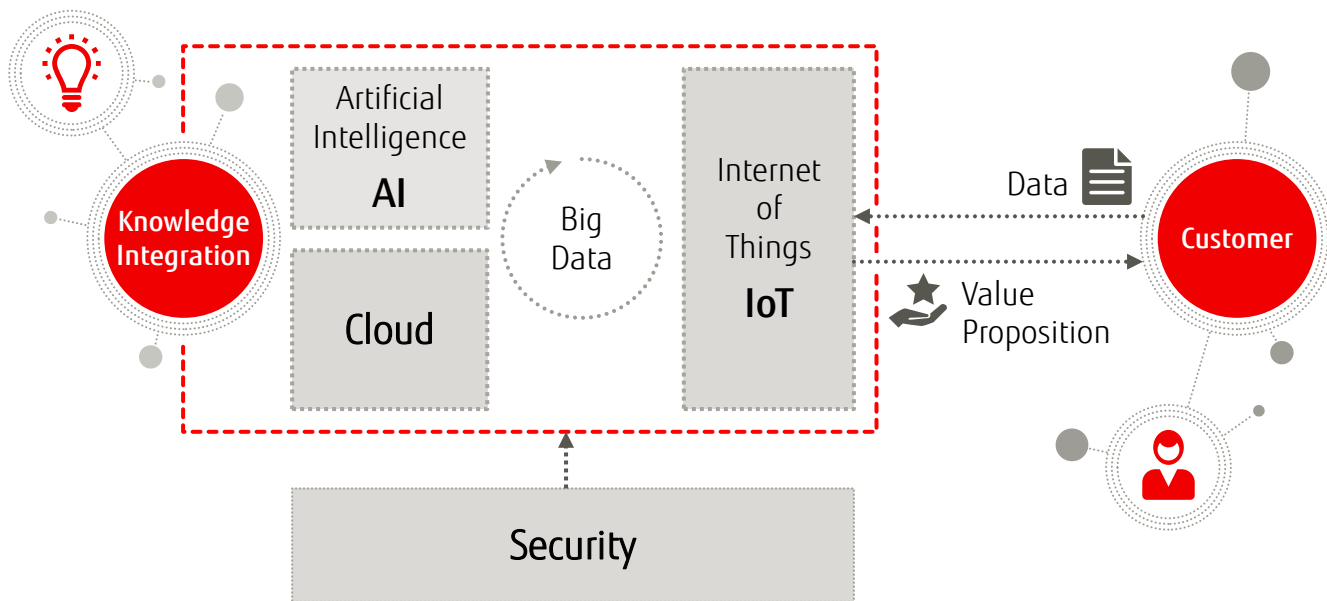
# Инфраструктурные решения для проекта «Умный город»

Кирилл Савенков

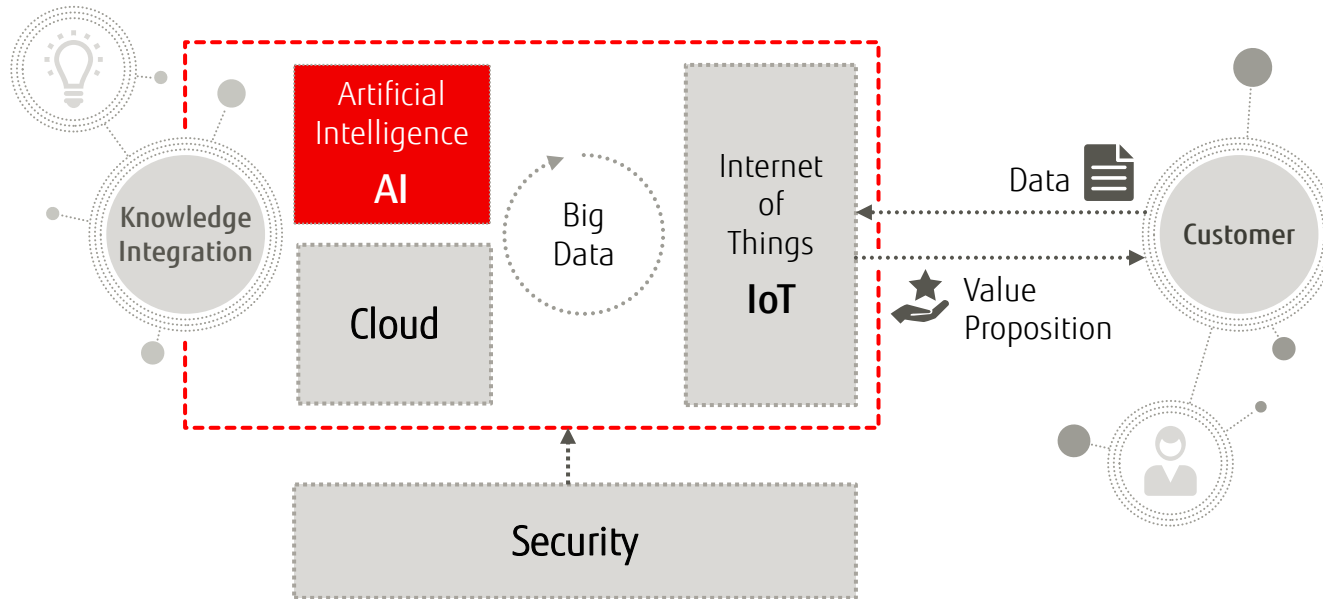
# Smart world



# Infrastructure for Smart World



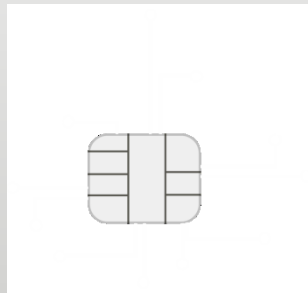
# Artificial Intelligence (AI)



# Deep Learning is the core of AI

## ARTIFICIAL INTELLIGENCE

A program that can sense, reasons, act and adapt



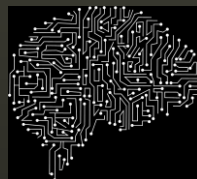
## MACHINE LEARNING

Algorithms whose performance improve when exposed to more data over time



## DEEP LEARNING

Multi-layered neural networks learn from vast amounts of data



Enables computers to mimic human behavior

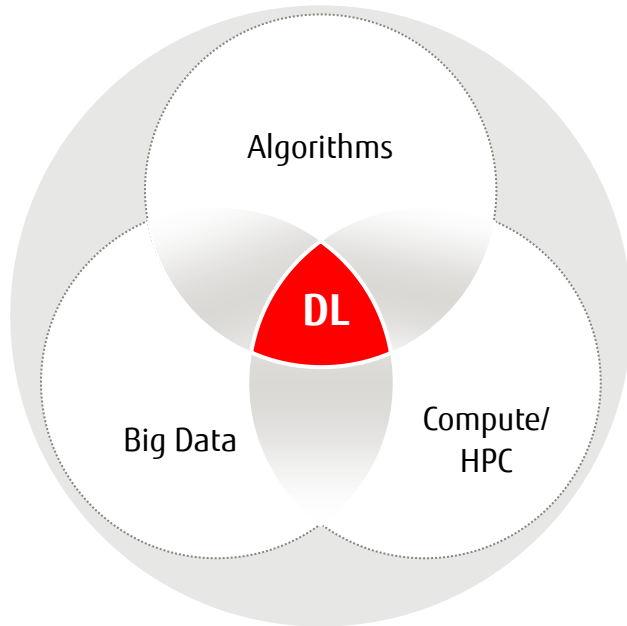
Gives computers the ability to learn without explicitly programmed to do so

Makes computation of multi-layered neural networks feasible



# What led to the rise of deep learning adoption?

## Improved and proven Algorithms, Big Data Analytics and High Performance Computing



### New Business requirements

Improve existing processes and increase automation

Reduce human interaction

Faster, more accurate predictions

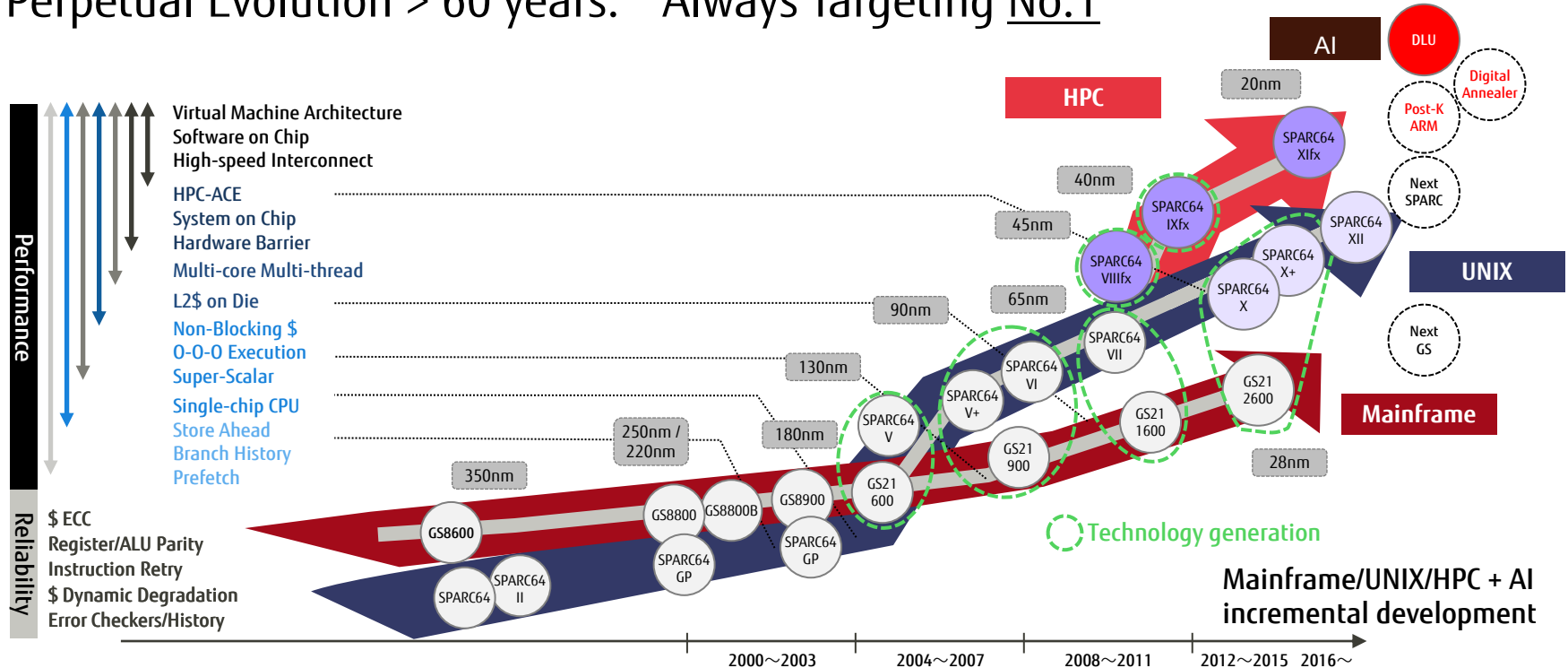
More complete understanding of customer needs

Fraud prevention, cyber security

# Fujitsu Processor Development

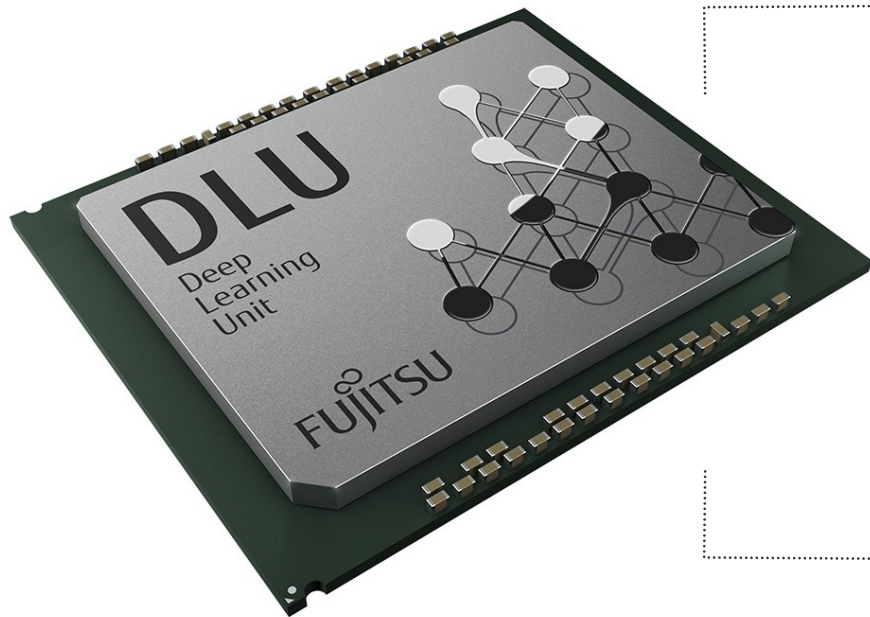


Perpetual Evolution > 60 years: Always Targeting No.1



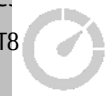


# Faster, easier and much more efficient



## Faster training time and self learning process

- High performance with high accuracy by DLINT8



## Easily scale and accelerate workloads

- Intelligent interconnect based on HPC technology

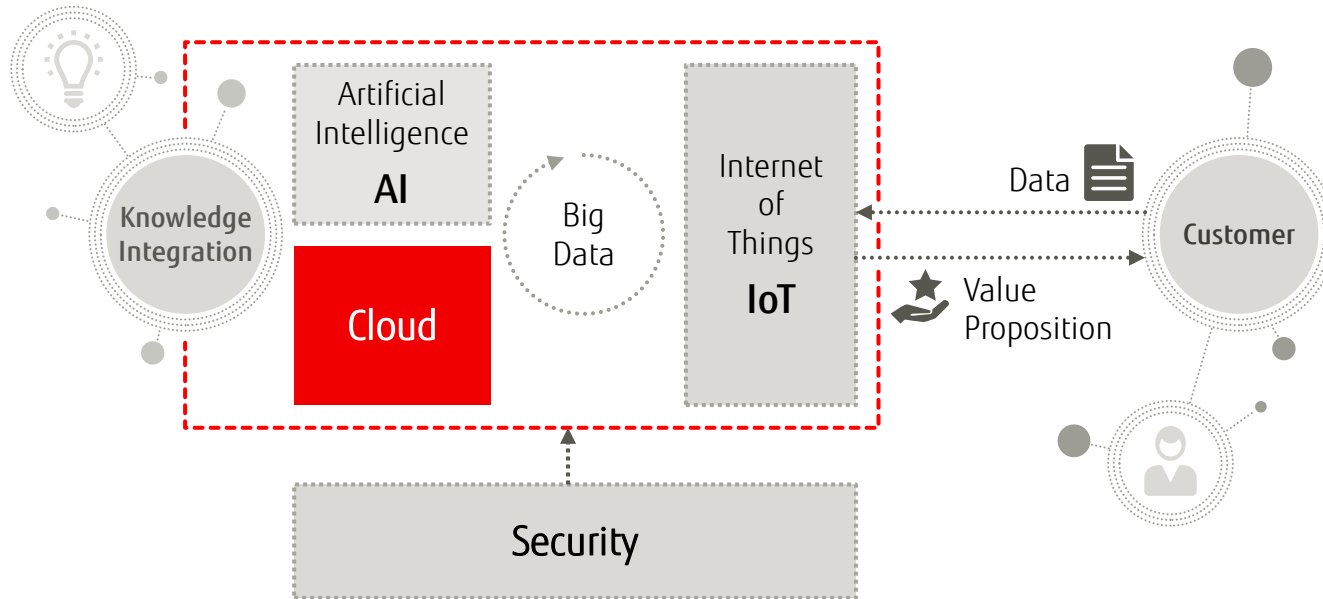


## Reduce Power Consumption

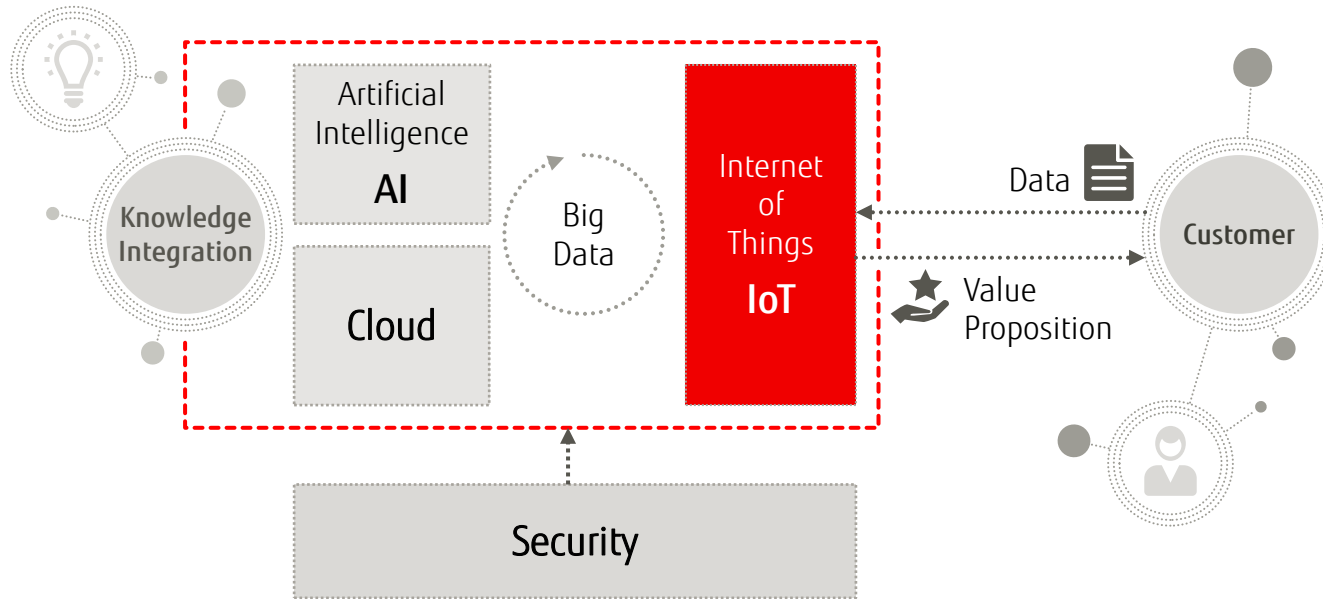
- Low-power chip design by simple circuit without degrading performance







# Internet of Things (IoT)



# Fujitsu INTELLIEDGE – the edge appliance making the edge intelligent



## ■ INTELLIEDGE Appliance

- Easily configurable
- Linux-based, virtualized platform
- Ready to run customer apps
- Apps isolated in sandboxes
- Blueprint for data collection and visualization
- Device, app and NW management included
- BIOS-integrated recovery
- Everything encrypted

## ■ Management options

- OPC-UA standard (OT-side)
- INTELLIEDGE Center (IT-side)

## ■ INTELLIEDGE Gateway

- Flexible configuration
- Win10 IoT Enterprise pre-installed (option)
- Azure certified GW or industry I

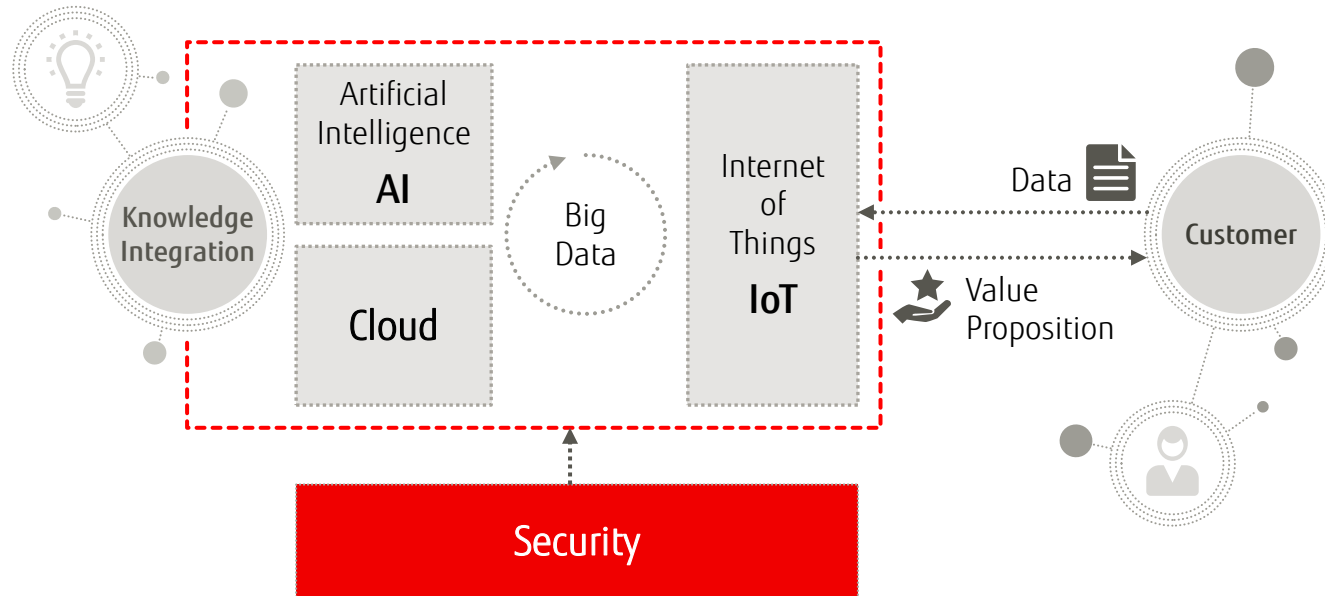
## ■ Common features

- Industrial housing (withstand extreme conditions)
- Shock and dust proof, fan-less

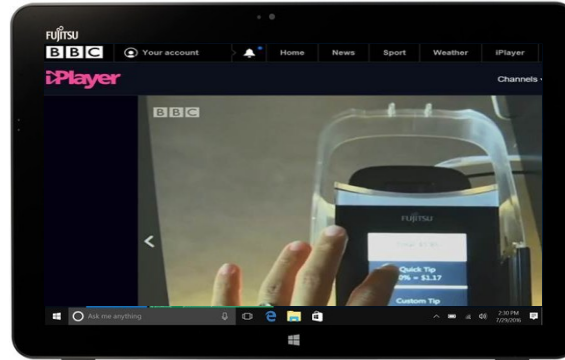


Secure transition from OT to IT.

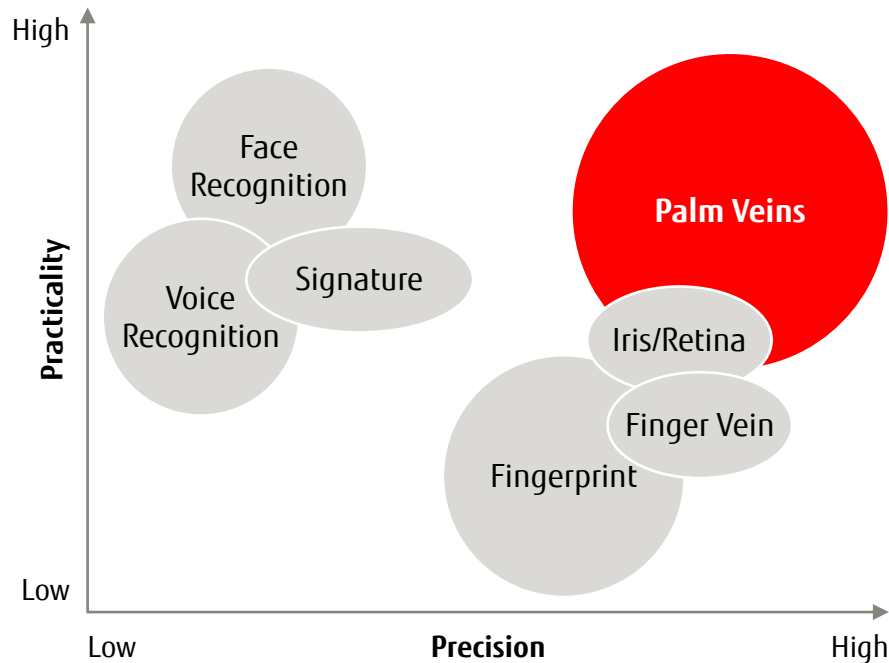
# Security



# Security



# Precision of biometric authentication



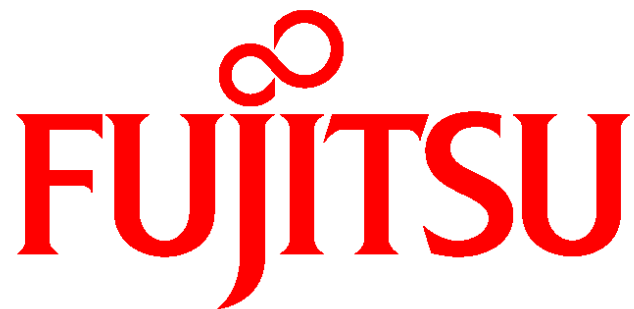
False acceptance rate (FAR) & false rejection rate (FRR) compared

Authentication Method	FAR (%)	FRR (%)
Face Recognition	~ 1.3	~ 2.6
Voice Pattern Recognition	~ 0.01	~ 0.3
Fingerprint Recognition	~ 0.001	~ 0.1
Finger Vein Recognition	~ 0.0001	~ 0.01
Iris/Retina Recognition	~ 0.0001	~ 0.01
Fujitsu Palm Vein Recognition	~0.00001	~ 0.01



Fujitsu's Palm Vein technology is the most precise and practical

<https://www.youtube.com/watch?v=kkvxMAA-oVo>



shaping tomorrow with you