



Core on Future Technologies for Human

For people
the center of future technology

SmartCore

Company Introduction

SMARTCORE

SmartCore is a company that creates a new future with people-centered creative solutions in various technology fields such as AI, blockchain, IoT, and fintech.

SmartCore does continuous research on technology for the convenient, safe, and better life of human.

A.N.D

we aim to think from the customer's perspective, develop together with our customers, and realize customer value based on our diverse project experience.

Management Ideology



SmartCore
creates future value with
innovative solutions that
improve
the quality of human life

Company's Info.

Corporate name SMARTCORE Co., Ltd.
주식회사 스마트코어

Establishment 01.10.2012

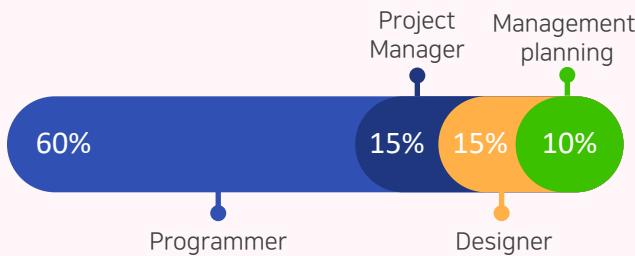
CEO GeunSeok Han

Address #1607, 298 Beotkot-ro, Geumcheon-gu
Seoul, Korea

Tel TEL +82.02.830.0858 FAX +82.02.857.0885

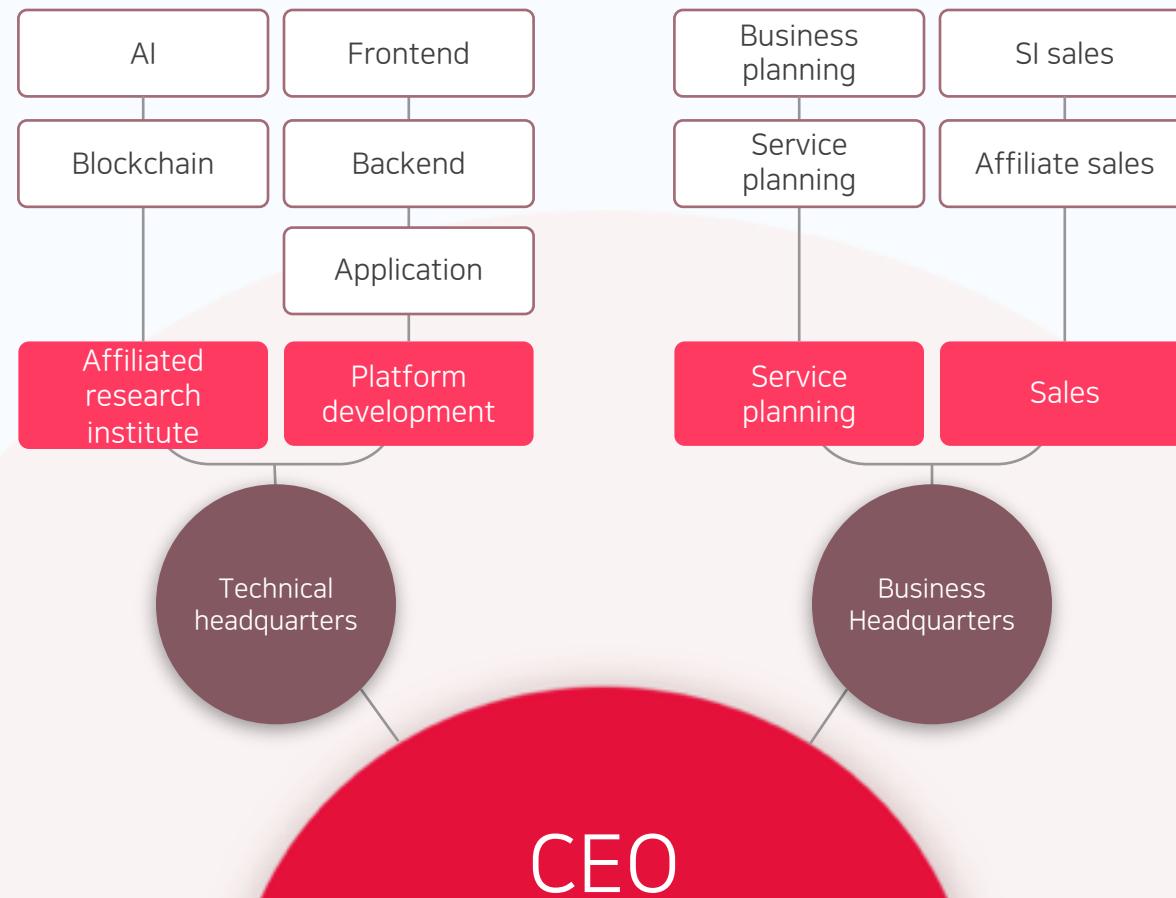
WebSite www.smcore.co.kr

Member



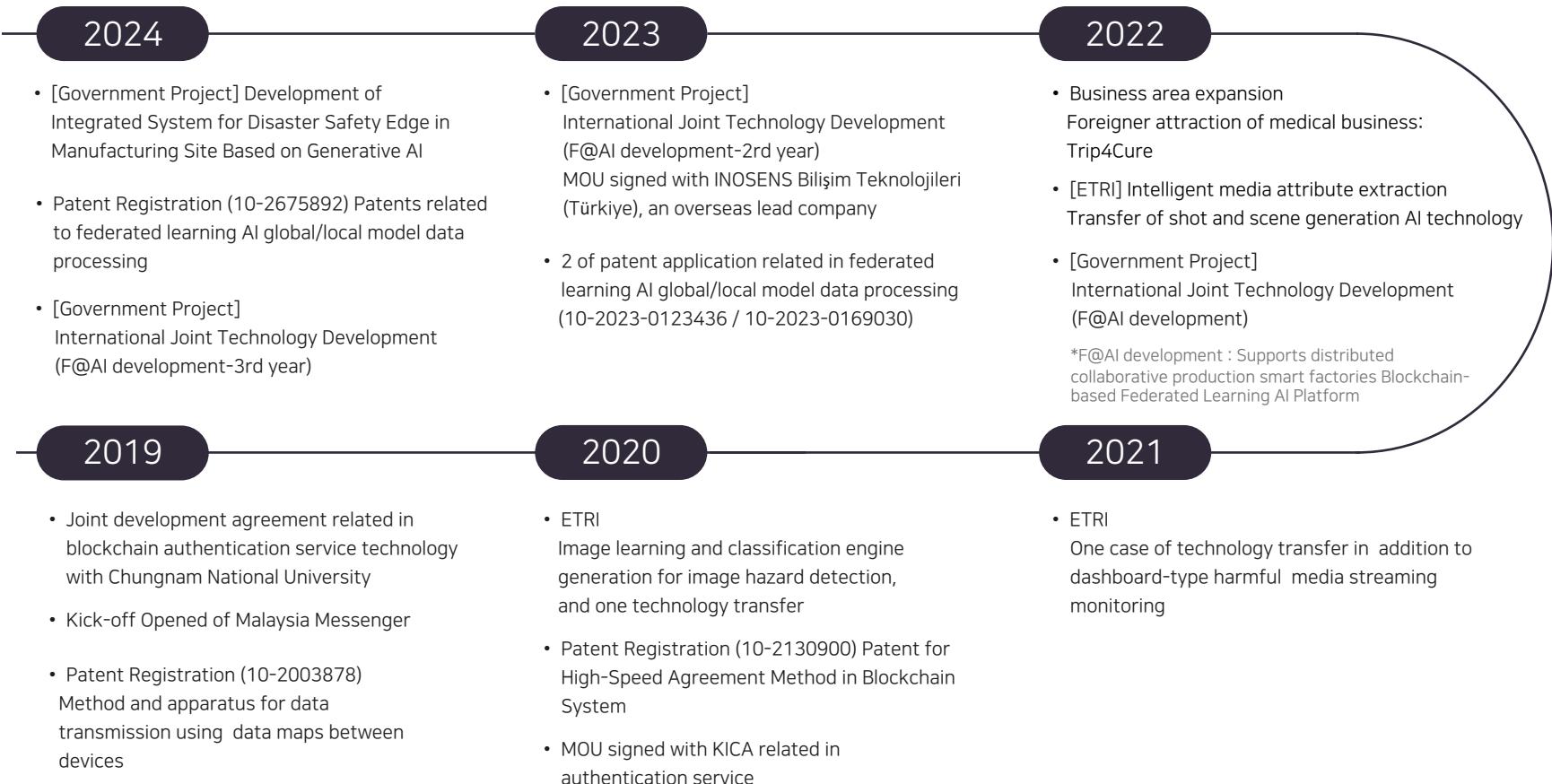
Organization chart

Technical headquarters dedicated to research and development of new IT technologies
It consists of a business headquarters dedicated to business/service planning and sales.



History

With the acquisition of new technologies, we are developing into a substantial company by carrying out projects in various fields.



History

With the acquisition of new technologies, we are developing into a substantial company by carrying out projects in various fields.

2019

- MOU sign with Hyundai Pay Co,Ltd.
- MOU signed with XFYRE(M) SDN BHD,KLCETECHNOLOGY SDN BHD (Malaysia)
- MOU signed with Graduate School of Information Security of Korea University
- MOU signed with Red Circle Studio Sdn Bhd (Malaysia)

2018

- Patent application related in High-Speed Agreement Method in Blockchain System (10-2130900)
- Development of Blockchain mainnet and digital asset platform

2017

- [Government Project] International Joint Technology Development (EmoSpaces service platform)
- [Government Project] Development of Phone to Phone payment system

2012~2014

- Construction of situation-aware N-Screen/ Tele-Screen platform
- Patent Registration (10-1216430) Color pattern image generation and authentication system and server
- Certification of venture companies
- Smart Core Inc. Established
- Development of SCPP (SmartCore Pay-Platform)
- ETRI IoT technology transfer

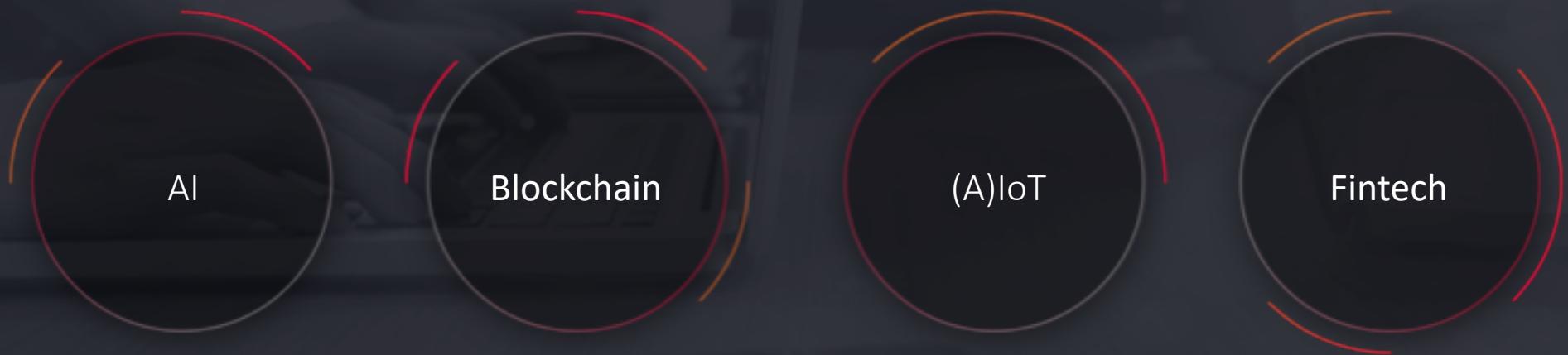
2015~2016

- Development of UI/UX authoring tool based on HTML5
- ETRI WoO Platform usage service integration
- Establishment of an affiliated research institute

- Development of IVY7 unmanned storage locker platform
- Development of control app for Bluetooth payment
- Development of IVY7 Payment Platform Back Office

2. Major Technology

SmartCore continues to research AI, blockchain, (A)IoT, and fintech technologies, which are the core of the 4th industrial technology, and develops various services and solutions based on technology.



AI

Artificial intelligence is deeply permeating our daily lives.

SmartCore is constantly researching AI technology for a more convenient and safer world in life.

SmartCore AI solution provides artificial intelligence services required in various industries, medical, and media fields.

Improve productivity, quality and customer satisfaction in production plants

SFS UP+



Federated Learning AI Platform

SFS UP+

Distributed collaboration support integrated AI platform with federated learning applied to enhance the efficiency of collaboration between smart factories and the security of business-critical information.

Diagnose depression by analyzing individual patterns

Dr.I



Depression diagnosis solution

Dr.I

Depression diagnosis solution for adolescents and seniors by analyzing individual emotional and behavioral information in a web object environment with AI and converting it into virtual objects.

Related Performance

- Research and development of AI-based distributed collaboration solution (2022~)
- Research and development of context-aware AI (Depression prediction) solutions (2017-2018)

Divide the shot based on the shot information of the video data and make it into a video

VEpro



Video segmentation editing solution

VEpro

Automatic video segmentation editing solution that extracts shots of video content with AI modeling and creates videos or images based on the information of the shots.

Blockchain

We self developed **mainnet** that required for the construction of a blockchain network and **consensus algorithm** that enables rapid creation and processing blockchain data.

And, we are developing the **F@AI blockchain platform** that further strengthens the reliability and security of data in the smart factory distributed collaborative AI platform by applying this technology.

Related Performance

- Blockchain-based payment platform development (2021)
- Blockchain-based point platform development (2019-2020)
- Blockchain mainnet development (2018~2019)



Blockchain Solution

Bable

Public blockchain with a consensus algorithm developed with its own technology and smart contract-based transaction optimization technology applied.



Blockchain Platform

Coreble

High-speed block creation and processing is possible by improving the disadvantages of DPoS.
High security and reliability can be secured with an algorithm that can generate blocks without a specific leader.

* Patent registration of high-speed consensus algorithm : 10-2130900



Blockchain Platform

F@AI Blockchain

PKI-based user authentication, device verification, data sharing between companies based on P2P communication, data integrity verification, smart contract, AI platform linkage function in the module that supports distributed collaboration between smart factories can further enhance the safety and reliability of the platform.

AIoT

SmartHome and sensor network technology and wearable communication technology

is owned, and we design and build user-oriented IoT solutions by analyzing data collected through deep learning.

Related Performance

- Development of unmanned item storage IoT app linked platform (2016)
- RAMAX ZISCON IoT system app development (2016)
- AMADAS door lock app development (2016)



IoT Platform

SM-Net

Sensor network technology that obtains information from sensors applied with OSGi, OMA, and M2M technology and controls and monitors devices with a network formed.



IoT Platform

SM-ComT

Short-range wireless communication technology for connection and data exchange between each wearable device.



IoT Platform

SM-AI

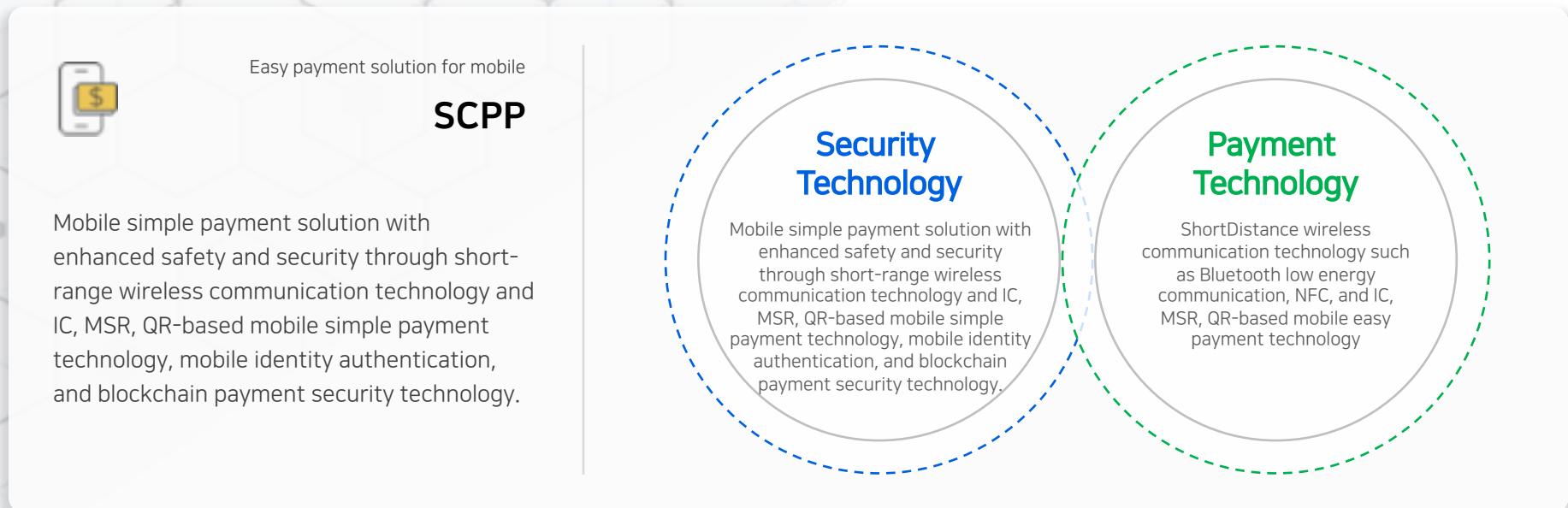
Risk factors are determined and prevented by analyzing behavioral patterns based on data collected through sensors and wearable devices.

Fintech

SCPP solution (SmartCore Pay Platform) is a security-enhanced mobile simple payment solution based on BLE, NFC, MSR, IC, QR payment technology and security technology.

Related Performance

- SCPP offline POS payment system development(2015~2017)
- Industrial Bank/Daegu Bank ATM terminal service development (2016~2017)
- KG Inicis KPay App Service Development (2015)



3. Main Business

SmartCore is engaged in **Service Development, Solution and System Building businesses** so that its technology can give benefit to people.



Main Business

Solution

SmartCore development experts build/develop solutions/platforms developed using AI, blockchain, IoT, and fintech technologies by optimizing them for the necessary business environment.

SI

We analyze the customer's requirements and design/implement the optimal system for the customer. And also increases the customer's business value by suggesting the direction of the system.

Solution Building

[SFS UP+] Plastic injection molding quality control solution

AI-based SFS UP+ solution using process variable data of plastic injection molding, environmental data and expert experience knowledge information

Blockchain

Supports SDK and API so that third parties can develop DApps using selfDeveloped mainnet
Support for use in various fields such as payment, game, content field, and smart manufacturing field

SCM Messenger Solution

Development and maintenance of messenger solutions for business collaboration for domestic small and medium-sized enterprises.
Implementation of messenger customization by linking with ERP and other solutions in the company



AI

Big data analysis, mining, machine learning, deep learning and Federated AI solution development, operation, maintenance Supply Federated AI solution to companies that want to introduce a smart factory based on distributed collaboration
Development and supply of big data analysis platform using data collection and AI in connection with IoT solution

CareOn Solution

Building of a comprehensive safe care solution for safe care of protected persons and smartphones



AIoT

IoT solution development, operation and maintenance using sensor network and wearable communication technology
Utilizing big data technology to analyze AIoT collected data and provide application solutions



SFS UP+

Utilizing process variable data and environmental data of plastic injection molding and expert experience knowledge information,

AI-based plastic injection molding quality management solution "AI-PQC Solution"

Federated learning-based plastic injection molding quality management solution "F@AI-PQC Solution"

The SFS UP+ solution provides various benefits such as increased production efficiency, improved quality, cost reduction, and AI-based plastic smart construction, and contributes to strengthening corporate competitiveness.

Related Performance

AI-PQC Solution Development (2024)

F@AI-PQC Solution Development (2024)

New Standards for Data-Based Plastic Production Smart Factories

AI-based plastic injection molding
Quality Management Solutions

AI-PQC Solution

Federated learning-based plastic injection molding quality
management Solution

F@AI-PQC Solution

[SFS UP+] AI-PQC Solution

Using process variable data of plastic injection molding, environmental data and expert experience knowledge information

AI-based plastic injection molding quality management solution "AI-PQC Solution"

➤ AI-based injection molding abnormality detection and process variable fine-tuning process



➤ AI-PQC Solution Advantages

Prevent the occurrence of defective products through immediate problem detection, Respond quickly in the event of a problem

Accurately identify the cause of defective products and prepare improvement plans through data-based knowledge information

Analyze collected data to optimize process variables, maintain product quality consistency, increase production efficiency, and optimize plastic production processes

Analyzing and predicting the operating data of the equipment to prevent mechanical failure and to perform maintenance

Fine-tuning process variables for high-quality injection molding to maintain optimal molding injection status and minimize downtime

[SFS UP+] F@AI-PQC Solution

Using process variable data of plastic injection molding, environmental data and expert experience knowledge information

Federated learning-based plastic injection molding quality management solution "F@AI-PQC Solution

Federated Learning AI-based injection molding abnormality detection and process variable fine-tuning process



F@AI-PQC Solution Advantage

Integrated Quality Management of Multiple Injection Molding Process

Variables for Plastic Injection

Minimize changes in the quality of injection products produced from multiple injection devices by comprehensively analyzing each process variable data collected in plastic production-1 and plastic production-2 in real time or at regular intervals to automatically adjust the optimal process variables.

- To reduce production costs, global production or distributed production detects changes in product dimensions and process parameters in real time to manage the quality of multiple injection products and maintain a certain quality.
- Consolidate the parameters of each factory-learned model from a central server to build a more accurate and robust predictive model, and maintain global quality standards

Process optimization

By comprehensively analyzing process variable data (injection pressure, temperature, time, etc.) and product quality data collected from multiple different devices based on fed learning, generalized optimal process conditions are derived.

Pre-precision maintenance of equipment

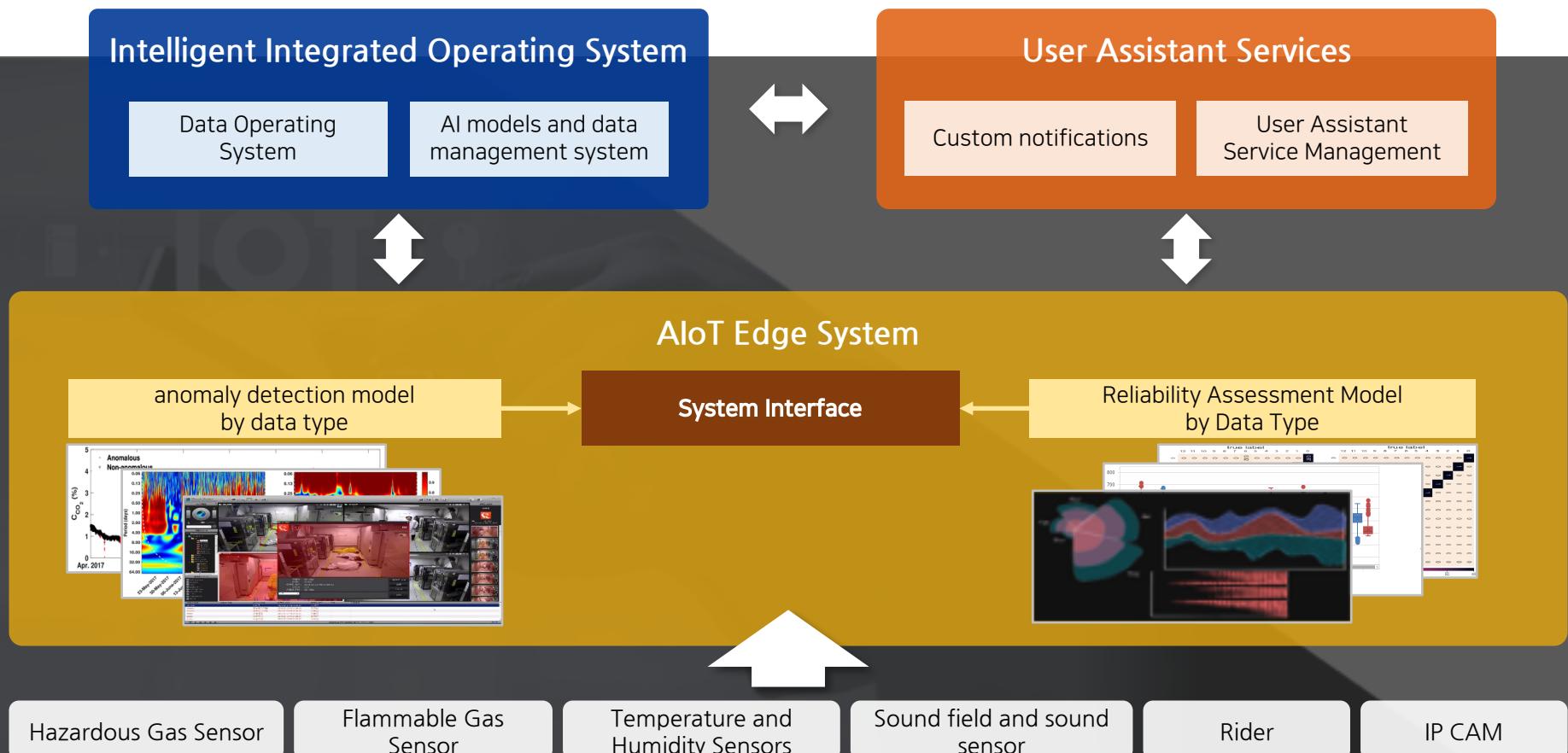
- Facility failure prediction: By analyzing facility condition data (vibration, temperature, noise, etc.), facility failure is predicted in advance and preventive maintenance is performed.
- Lifetime prediction: Minimize production disruption by predicting the lifespan of the facility and performing replacement or repair at the appropriate time.

AI-based manufacturing site disaster safety detection solution

Data from various sensors are analyzed based on AI in an integrated operating system
 To prevent and prepare for safety accidents and disasters at the manufacturing site
 It is an AI-based manufacturing site disaster safety detection solution.

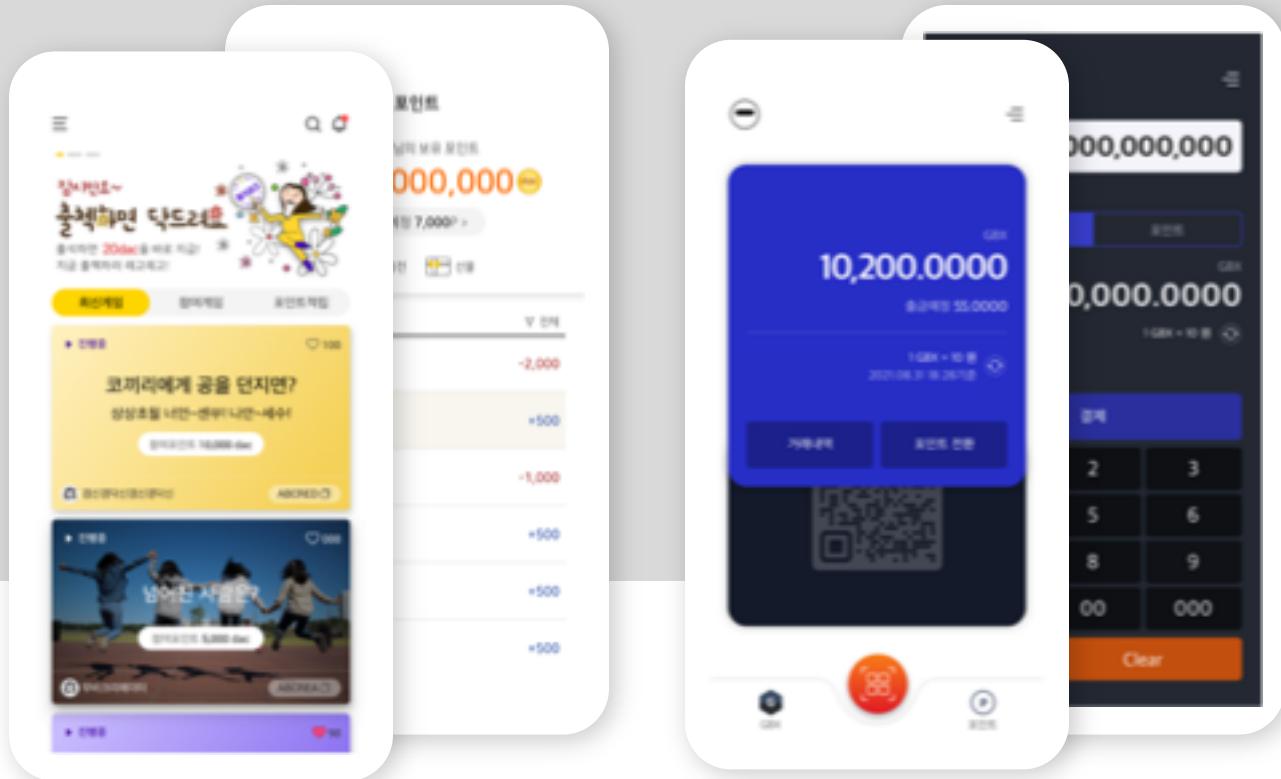
Related Performance

Development of AI-based Disaster Safety Edge Integration System at Manufacturing Site (2024)



Blockchain

- Blockchain-based payment platform development (2021)
- Blockchain-based point platform development (2019-2020)
- Blockchain mainnet development (2018~2019)



Point Platform

A blockchain-based gaming point platform that allows you to create video and text games and participate in games created by others.

Payment Platform

Blockchain-based payment platform using pay and points

CareOn Soulution

CareOn protects people and smartphones.

It detects the health condition, location, and safety of the person to be protected by utilizing the location detection function and motion sensor function of the smartphone, and sends a notification to the guardian or care manager in case of safety problems so that they can take quick action in case of an emergency.

And, It is **comprehensive safety care** solution that protects smartphones from risk factors in the mobile environment, such as viruses and phishing.



Comprehensive safety care solution

CareOn Solution

Comprehensive safety care solution that manages the safety of the person subject to protection with the smartphone's location detection function and motion sensor function, and protects the smartphone from viruses and smishing.



User **+5,000,000**

Related Performance

- SK Shielders Mobile Guard Development (2021~2024)
- SKT T-Guard Development (2013~2021)

Location/Sensor/ Notification

Detect whether or not the person to be protected is safe by using the smartphone's GPS-based location detection and motion sensor, and sends a notification to the guardian when a problem occurs so that they can take quick action.

Detection/ Notification

As a function to protect the smartphone of you or the target of protection, it sends a notification to the guardian when malicious code / smishing text is detected so that the smartphone can be safely managed.

CareOn Solution

- SK Shielders Mobile Guard Development (2021~2024)
- SKT T-Guard Development (2013~2021)



Tguard

SKT exclusive vaccine service for smartphone security with malicious code inspection, memory inspection, smishing inspection and notification functions implemented



Mobile Guard

Smartphone safety service that implements security functions such as real-time virus/smishing scan, QR scan, remote control app detection, family activity, location, and smartphone smishing scan function

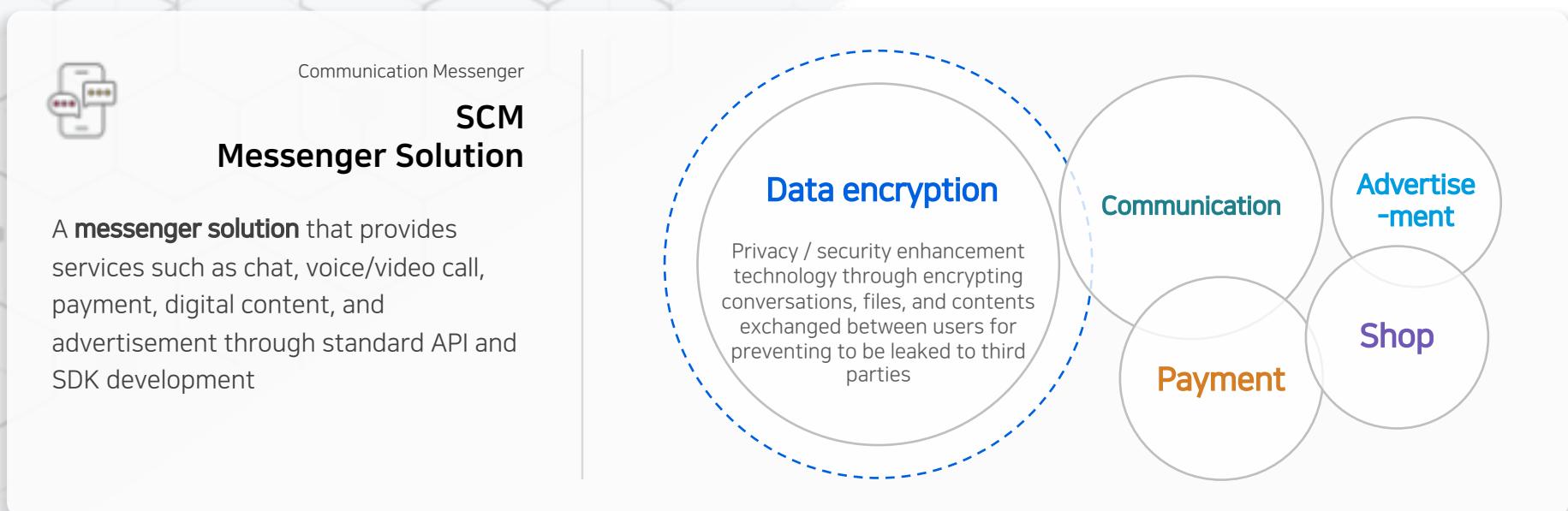
SCM Messenger Solution

As a communication messenger that allows users to send and receive messages and make video/voice calls anytime or anywhere, It enables 1:1 as well as group messages and video/voice calls, and provides stable messenger functions such as message management and friend management. It is a **safe messenger solution** with **enhanced messenger security** through **data encryption technology**.

The SCM messenger solution was built/developed as a local messenger in Malaysia abroad and as a messenger in SPC and securities messenger in Korea.

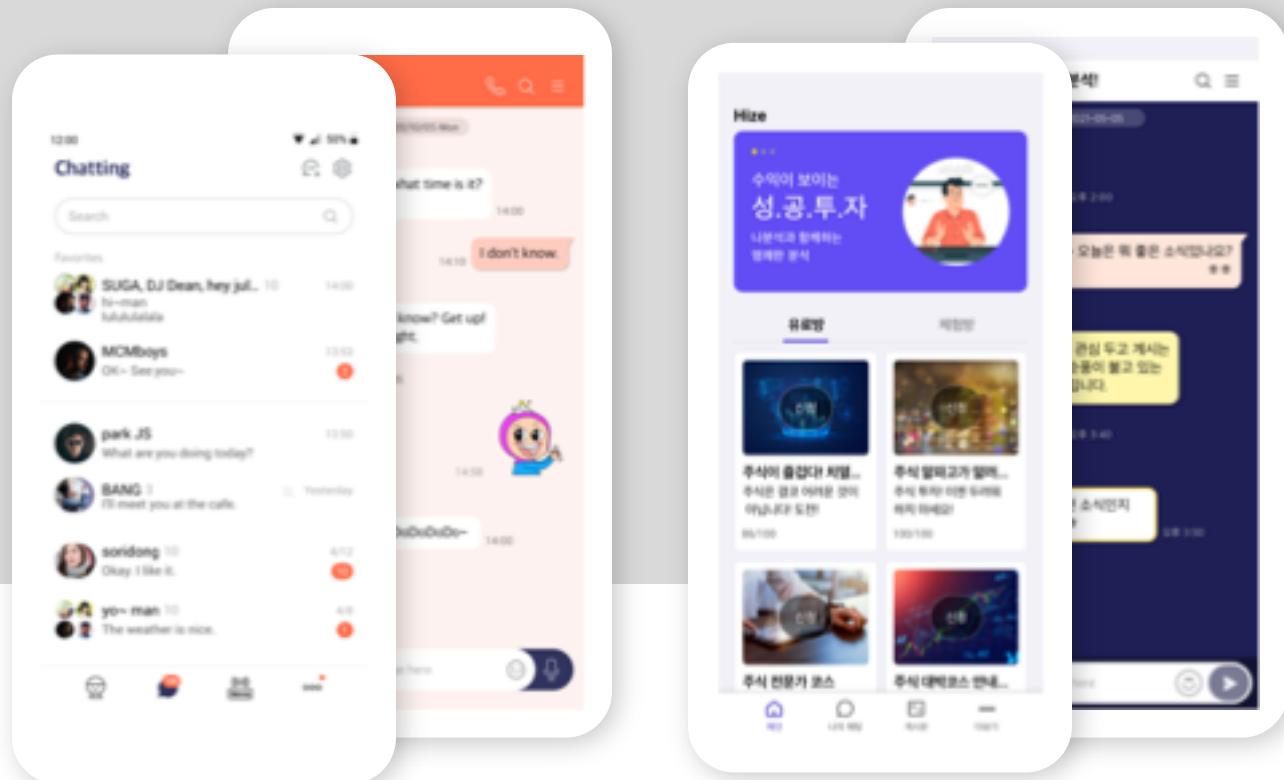
Related Performance

- Stock messenger solution development (2021)
- Crecker messenger service development (2020)
- SPC Networks SCtalk messenger development (2017~2018)



SCM Messenger Solution

- Stock messenger solution development (2021)
- Crecker messenger service development (2020)
- SPC Networks SCTalk messenger development (2017~2018)



Crecker

A messenger that reflects your lifestyle, and it provides a service optimized for local life by linking various messenger functions and news channels

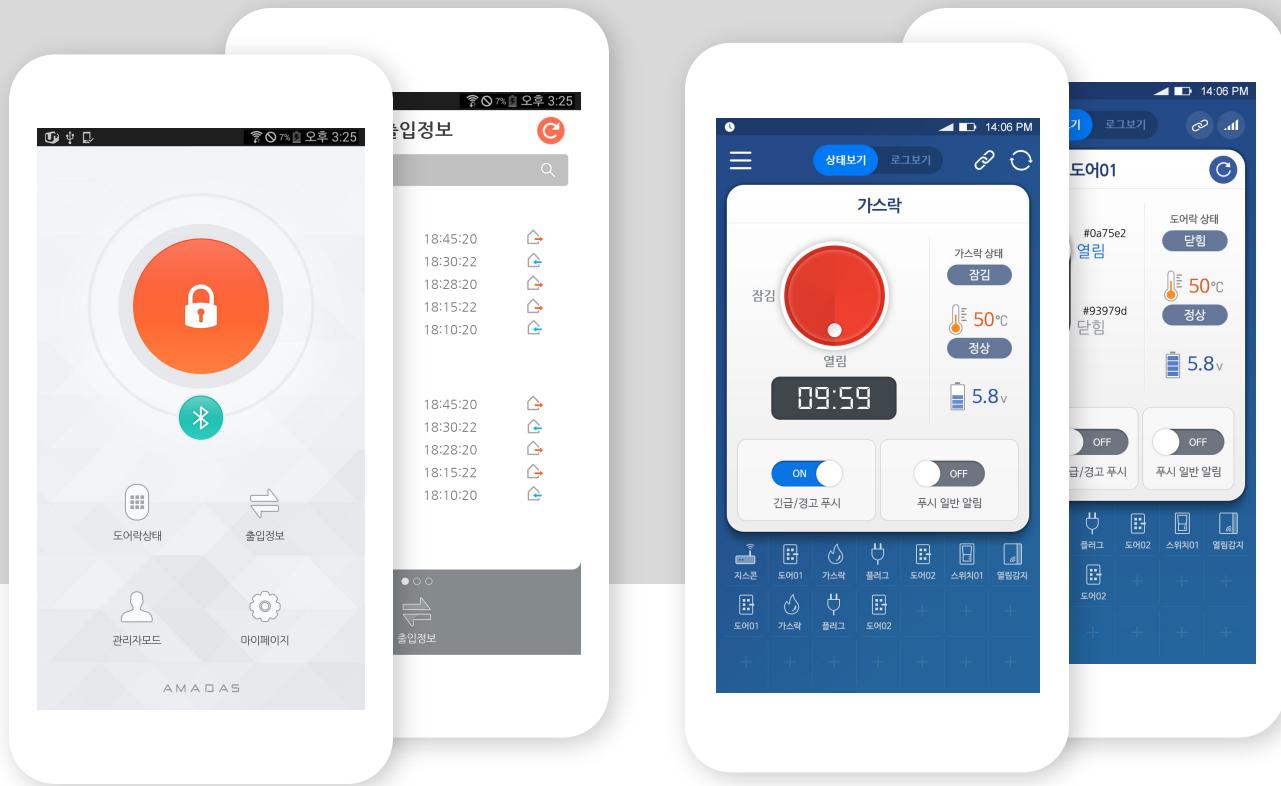


Stock Messenger Hize

Stock specialized messenger that experts analyze and inform stocks

AIoT

- Development of unmanned item storage IoT app linked platform (2016)
- RAMAX ZISCON IoT system app development (2016)
- AMADAS door lock app development (2016)



Digital door lock

A platform that implements functions such as controlling the door lock device through Bluetooth communication from the app, providing door lock usage information, and setting administrators

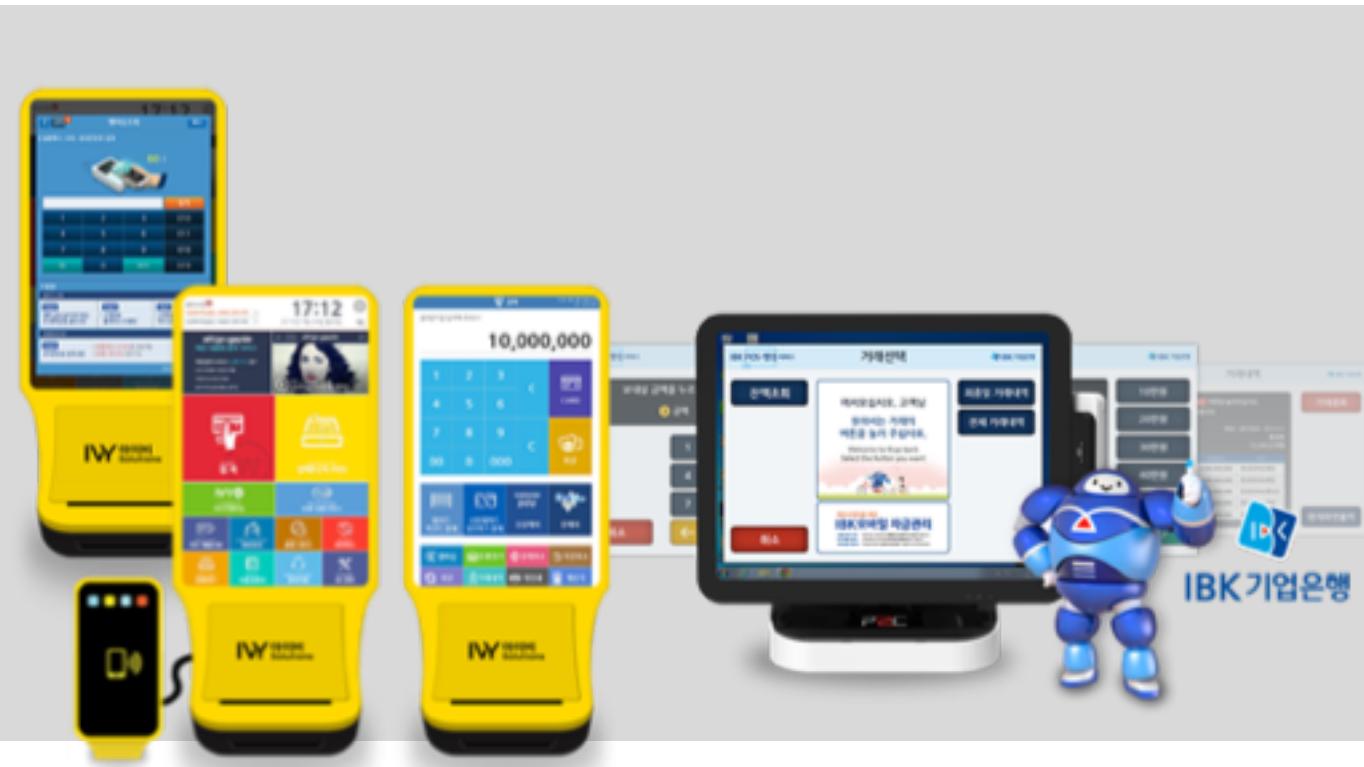


RAMAX ZISCON IoT System

ZISCON IoT service with functions such as gas control, digital door lock, smart switch, smart plug, and open sensor

Fintech

- SCPP offline POS payment system development (2015~2017)
- Industrial Bank/Daegu Bank ATM terminal service development (2016~2017)
- KG Inicis KPay App Service Development (2015)



IVY7 Payment System

Ivy solutions payment platform provided by IVY7 terminal Payment and membership linkage using Bluetooth communication
Implementation of payment, POS linkage, membership, card sales inquiry, financial service (IBK, DGB ATM service) functions



Industrial Bank/Daegu Bank ATM terminal service development

IBK Industrial Bank POS banking service and ATM service for POS terminals
Implementation of deposit inquiry, transaction history inquiry, and account remittance service functions

SI System Integration

We suggest directions and develop systems to maximize customer business value through development experience and expertise based on server, mobile (Android, iPhone), and windows technologies in various fields that require the IT industry.

SmartCore promises high-quality projects.

User Requirements
Through user consultation
Analyze and derive requirements

Planning and Analysis
About the requirements
Clear analysis and Development analysis, scheduling

Design
System Design
UI/UX Screen Design
Design draft production

Development and Deployment
Back-end and front-end development
Design, Publishing
Operating System Deployment and Testing

Operations and Maintenance
Quick and systematic response to failures stable and effective
Operations and Maintenance

SI System Integration

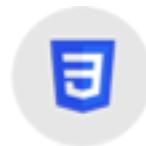
SmartCore development team

SmartCore's development team consists of frontend, backend, and application development experts with more than 5 to 10 years of development experience in various development environments.

They are development experts with professional technology through various project development experiences and technology research in addition to AI, Blockchain, IoT, and Fintech fields.



HTML5



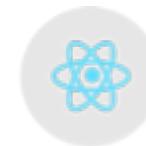
CSS3



J Query



Kotlin



ReactJS



NodeJS



Java



MongoDB



Python



Apache



MySQL



Redis



Android



iOS



4. Clients and Patents

SmartCore's **technology** and **trust** are the driving forces behind valuable development.

SmartCore is constantly striving for a successful project.

Clients



HDC 랩스



ShinhanCard



NICE정보통신



Partners



inosens



TORUN



Sidónios
KNITWEAR



SisTrade
Software Consulting, Lda

Patent List

Patent Information

| Registration number | Date | Patent content |
|---------------------|---------------|--|
| 10-2776352 | Feb 27, 2025 | A method of predicting plastic injection defects based on ontology and a server using it |
| 10-2691523 | July 30, 2024 | How to obtain a fitness index for business purposes in the process of generating a federated learning-based global model and a server using it |
| 10-2675892 | Jun 12, 2024 | Method for improving global model performance by applying data quality weights of local models in federated learning and server using the same |
| 10-2130900 | Jun 30, 2020 | High speed agreement method in blockchain system |
| 10-2003878 | July 19, 2019 | A method and apparatus for transmitting data using a data map between devices |
| 10-1216430 | Dec 21, 2012 | Color pattern image generation, authentication system, and server |

Patent Application

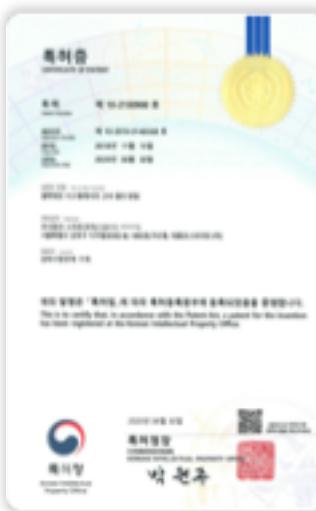
| Application number | Date | Patent content |
|--------------------|--------------|--|
| 10-2024-0200575 | Dec 30, 2024 | An ontology-based language model learning method for disaster safety response and a method and system for providing disaster safety information using it |
| 10-2024-0100576 | Dec 30, 2024 | Integrated Quality Optimization Method Using Federated Learning and System Using It |

Patent List

Joint Patent Information

| Registration number | Date | Patent content |
|---------------------|--------------|---|
| 10-1891883 | Aug 20, 2018 | The system and method for providing AR services based on the location of affiliated stores. |
| 10-1891875 | Aug 20, 2018 | Method of transmitting payment data through Bluetooth communication |
| 10-1795248 | Nov 1, 2017 | An electronic device and a method of controlling a short-range wireless communication module in the electronic device |
| 10-1718789 | Mar 16, 2017 | Contactless mobile payment system using Bluetooth communication. |
| 10-1718795 | Mar 16, 2017 | A contactless data transmission/reception terminal system that performs a Bluetooth communication function. |
| 10-1718793 | Mar 16, 2017 | Contactless mobile payment device data processing method using Bluetooth communication. |
| 10-1658607 | Sep 12, 2016 | A method of processing non-contact point data using Bluetooth communication. |
| 10-1649995 | Aug 16, 2016 | Contactless mobile payment device using Bluetooth communication. |

Patent Certificates



Patent Certificates (Document of Application)

관 인 생 략

출 원 번 호 통 지 서

출 원 일 자 2024.12.30
 특 기 사 항 심사청구(유) 공개신청(무) 참조번호(PD241376)
 출 원 번 호 10-2024-0200575 (접수번호 1-1-2024-1458652-67)
 (DAS접근코드91A8)
 출 원 인 명 청 주식회사 스마트코어(1-2012-022452-9)
 대 리 인 성 명 기율특허법인(9-2023-100061-7)
 발 명 자 성 명 한근석 이지혜 전경찬 한채연
 발 명 의 명 청 재난 안전 대처를 위한 온톨로지 기반의 언어모델 학습 방법 및 이를 이용한 재난 안전 정보 제공방법 및 시스템

특 허 청 장

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 (DAS접근코드5009)
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 발 명 자 성 명 정일영 한근석 전경찬 한채연
 발 명 의 명 청 연합 학습을 이용한 통합 품질 최적화 방법 및 그를 이용한 시스템

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<< 안내 >>

1. 귀하의 출원은 위와 같이 정상적으로 접수되었으며, 이후의 심사 진행상황은 출원번호를 이용하여 특허로
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까운 은행 또는 우체국에 납부하여야 합니다.
※ 납부자번호 : 0131(기본코드) + 접수번호
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4. 기타 심사 절차(제도)에 관한 사항은 특허 홈페이지를 참고하시거나 특허고객상담센터(☎ 1544-8080)에
문의하여 주시기 바랍니다.
※ 심사제도 안내 : <http://www.kpo.go.kr/지식재산제도>

<< 안내 >>

1. 귀하의 출원은 위와 같이 정상적으로 접수되었으며, 이후의 심사 진행상황은 출원번호를 이용하여 특허로
물페이지(www.patent.go.kr)에서 확인하실 수 있습니다.
2. 출원에 따른 수수료는 접수일로부터 다음날까지 통봉된 납입영수증에 성명, 납부자번호 등을 기재하여 가
까운 은행 또는 우체국에 납부하여야 합니다.
※ 납부자번호 : 0131(기본코드) + 접수번호
3. 귀하의 주소, 연락처 등의 변경사항이 있을 경우, 즉시 [특허고객번호 정보변경(경정), 정정신고서]를 제출하
여야 출원 이후의 각종 통지서를 정상적으로 받을 수 있습니다.
4. 기타 심사 절차(제도)에 관한 사항은 특허 홈페이지를 참고하시거나 특허고객상담센터(☎ 1544-8080)에
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