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1. WHO WE ARE

Intelligence Identifying

- Vision
- Major History
- Organization and business performance
- Technological competitiveness
Leading innovation in the coming future society with convergence intelligence

Granting intelligence/
Value creation

Artificial intelligence
service
special enterprise

Embedded SW solution
special enterprise
From an embedded solution enterprise to a global leading AI special enterprise

1998  Established MDS Technology Co., Ltd.
2014  Incorporated into the Hancom Group
2015  • Awarded the "Grand Prize" of IoT platform Korea SW company competitiveness
       • Established Hancom Interfree company
2016  • NeoIDM, OMA International Standard Interoperability Test
       • Rated as the best in the client/server category
       • Released officially the MalangMalang GenieTalk app service
       • GenieTalk, Awarded the Award Korea 2016 App of the Year
2017  • Performed NeoIDM-based factory environment monitoring system implementation pilot project
       • Supplied NeoIDM Samsung Electronics Smart Home
       • GenieTalk awarded the 2017 Most Recommended App
       • GenieTalk won in the KMA Korea Mobile Awards 2017
2018  • Awarded the NeoIDM New Software Product Grand Prize (February Embedded SW part)
       • Accredited with GS Certification (level 1)
       • GenieTalk performed official automatic interpretation and translation service for the 2018 Pyeongchang Winter Olympics
       • Supplied voice recognition engine for the Seoul Mayor's Office IT advancement project
2019  • Advanced to the security / authentication market (encryption key management solution field)
2020  • Launched Hancom Intelligence Co., Ltd.
       • following the split-off from Hancom MDS Co., Ltd.
       • Advanced to NeoIDM overseas market (exported smart store IoT management platform to Japan)
       • Awarded the Safety Innovation Product of the Year with Corona 19 prevention solution "Hi.DAL"
Organization and manpower structure composed of experts in each field
Engaging in sustainable businesses with diverse industry portfolios and technology-oriented workforce structures
Securing technological competitiveness through patents and certifications on Artificial Intelligence, Security, and IoT

- Patents – IoT devices
  - Provisioning system
- Corporate research institute certificate
- GS Certification - NeoKeyManager
- GS Certification - Neo/DM
- KISA Certification – Face Recognition AI
- Awarded - Neo/DM K-ICT software Grand Prize of Product Target
- Awarded - Neo/DM K-Safety Innovation Awarded the 2020 Innovative Technology Prize
- Copyright - Neo/DM
- Patents – including IoT devices
  - Smart gateway
- Patents – IoT Environment Support Encryption key management service
- Patent – Use of thermal imaging camera
  - Visitor body temperature measuring device
- Patent – Real-time Malignant code detection/gathering device
- Patent – Monitoring the number of people
  - IoT sensor
- Patents – IoT basis
  - Fire control system
- Trademark right - Bitsentry
- GS Certification - Bitsentry
2. ROADMAP

Intelligence Map

- Business Area
- Business Roadmap
Intelligence
Business Area

ENGINEERING
Key to next-generation mobility
Development platform that develops software easily and is extensible

CONNECTIVITY
Communication that grants intelligence through device-to-device connectivity and where security is enhanced

ARTIFICIAL INTELLIGENCE
Artificial intelligence platform that supports smart business optimized for various industries
Intelligence
Road map
3. BUSINESS

All About Intelligence

- Artificial Intelligence
  Connectivity
  Engineering
NARU AI is an AI platform designed to be extensible to various fields, providing optimized services that meet the needs of customers from startups in the early stages of growth to various companies and institutions. NARU AI recognizes voice in real time, increases the efficiency of multilingual document translation and video translation by extracting subtitles and creates natural OTT subtitles, and provides live commerce translation service through real-time video translation. Furthermore, NARU AI contributes to borderless communication of video contents through video and audio synthesis.
Document translation service

NARU Docs

NARU Docs provides multilingual translation output by maintaining the document layout and format and supports convenient translation service without worrying about document leak because it is possible to build on-premises.

[Applied field]
- Interpretation and translation
- Web translation
- Document translation

[Introduced case]
- Applied to the official interpretation and translation app for the Pyeongchang Winter Olympics
- Official overseas document translation system of public institutions
- Equipped with AI speaker translation module
- Service robots (curating robots, home robots, etc.)
- Hancom Office Document Translation Service
- Applied to portable interpretation/translation terminal
- Applied to artificial intelligence terminal for conference

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Service introduction

1. Upload original document
2. Document Conversion Server
3. Machine Translation Server
4. Download Translation Completed Documents

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Service characteristics

- Domain-dedicated terms
- Learning function support
- Support for building SaaS, On-premise
- Minimal server operation
- Environmental support
Real-time video subtitle creation service

**NARU Live**

NARU Live automatically creates scripts by extracting audio from real-time video and supports a service that can be translated into the desired language. NARU Live can be applied to various service platforms or devices such as OTT, live commerce, and videoconferencing, which require real-time translated subtitles.

**[Applied field]**
- OTT
- Live commerce
- Video lecture
- Real-time videoconference
- Online seminar

**[Introduced case]**
- Live commerce broadcast real-time multilingual subtitles
- Video content (drama/movie/YouTube, etc.) multilingual subtitles
- Telephone call recording at AI contact center and content analysis
- Recording system at marketing offices such as banks, securities, and insurance companies
- Service robots (curating robots, home robots, etc.)
- Real-time interpretation subtitles of seminar presenters at conferences, associations, schools, etc.
- Real-time interpretation and translation for educational purposes for children from multicultural families
- Seoul Digital Citizen Mayor’s Office

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**Service introduction**

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**Service characteristics**

- Application of deep learning/machine learning algorithms
- Using deep learning-based acoustic models and statistical-based language models
- LSTM / E2E Utilization of dual engine
NARU Eye recognizes objects, extracts feature points, and converts them into information desired by the user in real time. As NARU Eye recognizes various objects such as human faces, actions, letters and numbers, it can be applied to various services such as remote identification based on visual intelligence, control, management etc.

**Applied field**
- Facial recognition and user authentication
- Abnormal behavior detection in various field situations
- Video integrated control
- Remote meter reading
- OCR

**Introduced case**
- Access control system
- User authentication system
- Local government analog water meter machine reading

**Service characteristics**

- Application of deep learning/machine learning algorithms
- Deep learning-based video analysis, object extraction, use of cognitive model
- CPU/GPU-based operating environment
Creation of artificial intelligence learning data and automatic learning service

NARU Gate

NARU Gate can create data sets by rapidly processing data for artificial intelligence learning, and anyone can easily and quickly label data on the target of various data such as audio and video, etc. through the automatic labeling function.

[Applied field]
- Structured and unstructured data analysis
- Voice data collection
- Data collection automation
- Image / Video data labeling
- Customer pattern data analysis / report

[Introduced case]
- Telephone call inspection of Corona self-isolation health monitoring (AI check 25)
- OCR recognition project for examination documents by banks, insurance companies, etc.
- Processing/inspection of Speech and Translation Parallel Learning Corpus
- Creation and inspection of AI engine training data

Service characteristics

Support for custom labeling such as OCR and Transcription

Provision of auto-labeling function

Data-driven automatic learning and artificial intelligence API service
Connectivity & Security

We provide object cognitive intelligence by easily connecting and securely integrating devices and services and create optimal customer value in digital twins by using lightweight Internet technology boasting of high safety and security and international interoperability security technology.
IoT device management platform

NeoIDM

The need for an open structured IoT standard platform that can efficiently manage the rapidly growing number of IoT devices and various services is growing. NeoIDM is a device management platform for data collection and control of IoT devices and firmware update. As NeoIDM is designed to be applied easily to heterogeneous and low-spec sensors, gateways, and servers based on the international standard LwM2M, it can be applied to various IoT scenarios.

[Applied field]
- Smart City / Smart Medical
- National Defense
- Security / Environment
- Digital twin platform

[Introduced case]
- Water remote meter reading
- Smart store
- Factory fire monitoring
- Large air purifier management
- Shared bike management
- Fine dust management
- Rental housing management

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Service introduction

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Service characteristics

International standard LwM2M
Expansion of application services
Excellent security
Cybersecurity Solutions

NeoKeyManager

NeoKeyManager is a solution that supports the establishment of a secure authentication system against hacking threats for finance, connected cars, and various devices that require enhanced security. NeoKeyManager issues and manages security certificates and safely stores the created encryption keys; through such, it can enhance security between devices and services as well as international standard requirements.

[Applied field]
- Finance and Fintech
- Connected car
- Smart City / Smart Medical
- National Defense
- Drone

[Introduced case]
- On/Offline Commerce System Security
- Mobile Security of telecoms company
- Fintech and financial system security
- Automotive Controller Certification
- SW integrity certification distributed in the automotive/national defense field
- Security certification within government agencies

Service introduction

Service characteristics

International standard cryptographic key management interoperability protocol
Acquired National Intelligence Service's Cryptographic Module Certification (KCMVP)
Enterprise-wide encryption key integration management
Secure Remote Update Solution

NeoSecureFOTA

NeoSecureFOTA is a firmware remote update solution with strong security features added. NeoSecureFOTA additionally supports PKI technology-based security functions for secure device update, and it can be used not only for remote update of various IoT devices but also for remote update of various devices such as autonomous vehicles, drones, and aircraft.

[Applied field]
- Home IoT
- Smart Healthcare
- Smart City
- Connected car
- Drone, National defense

[Introduced case]
- Connected car application remote update and code signing
- ECU Equipment Management for Vehicles
- Device certification operated by government agencies
- Bike sharing platform

Service introduction

Service characteristics

- World's first FOTA, PKI integration
- Automatic update process through campaign setting function
- Prevention of data leak by applying public section encryption communication
Smart remote meter reading solution

HY·Check

HY-Check is a remote meter reading solution that recognizes numbers by attaching a camera module to an existing analog meter reader and supports automatic counting. HY-Check can continuously improve the meter reading accuracy by analyzing and managing the image data of digital/analog meters through machine learning. HY-Check can be applied not only to water but also to social safety net services such as gas and electricity, etc.

[Applied field]
- Water and gas remote meter reading
- Electric remote meter reading
- Digital/Analog meter machine monitoring

[Introduced case]
- Each municipality

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Service introduction

Real-time water usage monitoring

Digital/Analog meter machine monitoring

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Service characteristics

NeoIDM AI-based real-time device integrated management

Access rights by regional base Control group management

3D modeling support in connection with digital twin platform
Engineering Automation develops and verifies safety-free software, which is the core of future autonomous vehicles, up to various international standards that must be observed for this. Engineering Automation supports the leap forward as a global manufacturer by giving proven values to difficulties faced by developers with an automated design verification platform.
RapidAUTO is a solution with built-in development methodology to design and verify reliable systems/software according to international standard requirements. RapidAUTO designs and verifies requirements pursuant to guides, designs a series of processes according to international standards, and improves development productivity and facilitates evaluation response by connecting traceability to all processes.

**Applied field**
- Automobile (Electric Vehicles/Connected Cars)
- National Defense/Aviation
- Drone
- Public/Research Institutions

**Introduced case**
- BMS (Battery Management System)
- Motor/Inverter
- Digital cluster
- Transmission
- AVN (Audio/Video/Navigation)
- EMS (Energy Management System)
- LED driver
- Radar module

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**Package introduction**

**Package characteristic**

- The only development platform supporting AUTOSAR in Korea
- Engineering services that enable internalizing development capabilities
- Support of ISO26262, A-SPICE, AUTOSAR, ISO/SAE21434
Function extension package interlocked with tool

R.Connector

The design · verification automation platform tracks the relationship between development products in connection with the optimal tool used by developers for years, enhancing project management and operations capabilities. Through this, it creates customized processes for each project, executes the project tailing accordingly, and reflects safety requirements to design; it is possible to reduce investment costs such as cybersecurity and improve productivity by supporting interworking with security threat detection tools.

Applied field

- Creation of customized processes for each project through international standards and process integration
- Integrated project management that manages the entire software development process
- Safety and cybersecurity analysis
- Source code quality control and security vulnerability detection such as coding rules
- Automate dynamic security testing and coverage analysis
- Requirements-based process/project integrated management
- System/Software Design and Implementation
- Coding rule checking and source quality control
- Source code security vulnerability detection

Package introduction

Requirements Management
- DOORS function requirement management
- Medini analyte safety requirements management

Process/Project Management

Unit/Integrated Test
- VectorCAST Securing code coverage through dynamic verification
- Ranorax Securing code coverage based on UI

Static/Unit Test

Design
- RapidAUTO ISO26262 and ASPIRE design solutions with built-in development methodology

Implementation
- RapidAUTO model-based unit/integration tests

Package characteristic

Software Life cycle management

Process Building and Tailoring

Reliability test Integration testing
Consulting

As the software in the system proliferates, the probability of being exposed to various threats increases, and the importance of the international safety standard guide that must be followed to respond to them is increasing. To this end, we provide a system that can systematically and professionally follow the guide, including software engineering consulting. We support services that develop and internalize the capabilities of our clients based on specialized tools, not one-time consulting.

[Applied field]
- A-SPICE, ISO26262, AUTOSAR process construction consulting and engineering
- Execution of major safety activities required by functional safety standards and creation of products considering examination
- System requirements analysis and management system establishment consulting
- Method of detecting and managing cybersecurity threats
- Reliability verification through dynamic security testing and coverage analysis verification

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Consulting field

- National Defense
- Aviation
- Automotive

Consulting characteristic

- Functional safety
- Cybersecurity
- Reuse of System software Component reuse
4. REFERENCE

With Intelligence

- Customers
- Global networks
Intelligence
Global Network

System & Software development

Big Data, AI/Security

Hardware design & Interpretation

Altium

Honeywell

Dassault Systemes

PLATO

structure101

methodpark

ANSYS

AbsInt

Ranorex

sense time

PFP

cybersecurity

dataiku

Checkmarx

Perforce

GrammarTech

WhiteSource

Karamba

security
Convergence intelligence
special enterprise

HANCOM INTELLIGENCE

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<th>Ji Chang-gun</th>
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