NOVATEK

NOVATEK
COMPANY PROFILE

Table of Content

About Company

As a company in its ninth year, Novatek is striving to become a leader in <Intelligent Robotic Systems and Digital Twins> based on the strong customer trust and technology it has accumulated over the years.

NOVATEK Ltd.

CEO **Dong Seok SONG**

Address	**Headquarters**	Room 204, VR-AR Production Base Centre, 73, Bosung-gil, Dong-gu, Ulsan, Korea
	R&D	Room 804, Venture Building, 129, Okhyeon-ro, Nam-gu, Ulsan, Korea
	Seoul Branch	4F, Mido Building, 34, Nambusunhwan-ro 351-gil, Gangnam-gu, Seoul, Korea
	Busan	52-24, Namsan-dong, Geumjeong-gu, Busan, Korea
	Vietnam	Khu đô thị Ciputra, Nam Thang Long Urban Area, Tay Ho District, Hanoi, Vietnam
Establishment	11 February 2015	
Employees	49 (as of end 2022)	
Business Area	▶ Development and supply of logistics robot control system ▶ Development and supply of virtual training system for remote decommissioning and clean-up of nuclear contaminated facilities ▶ Development and supply of industrial safety virtual training contents and simulators ▶ Development and supply of robot system for safety inspection inside structures	
Capital	214 million KRW	
Revenue	3,532 million KRW (2022)	**R&D expenses as a percentage of revenue** 24% (2022)
Homepage	www.novatek.kr	

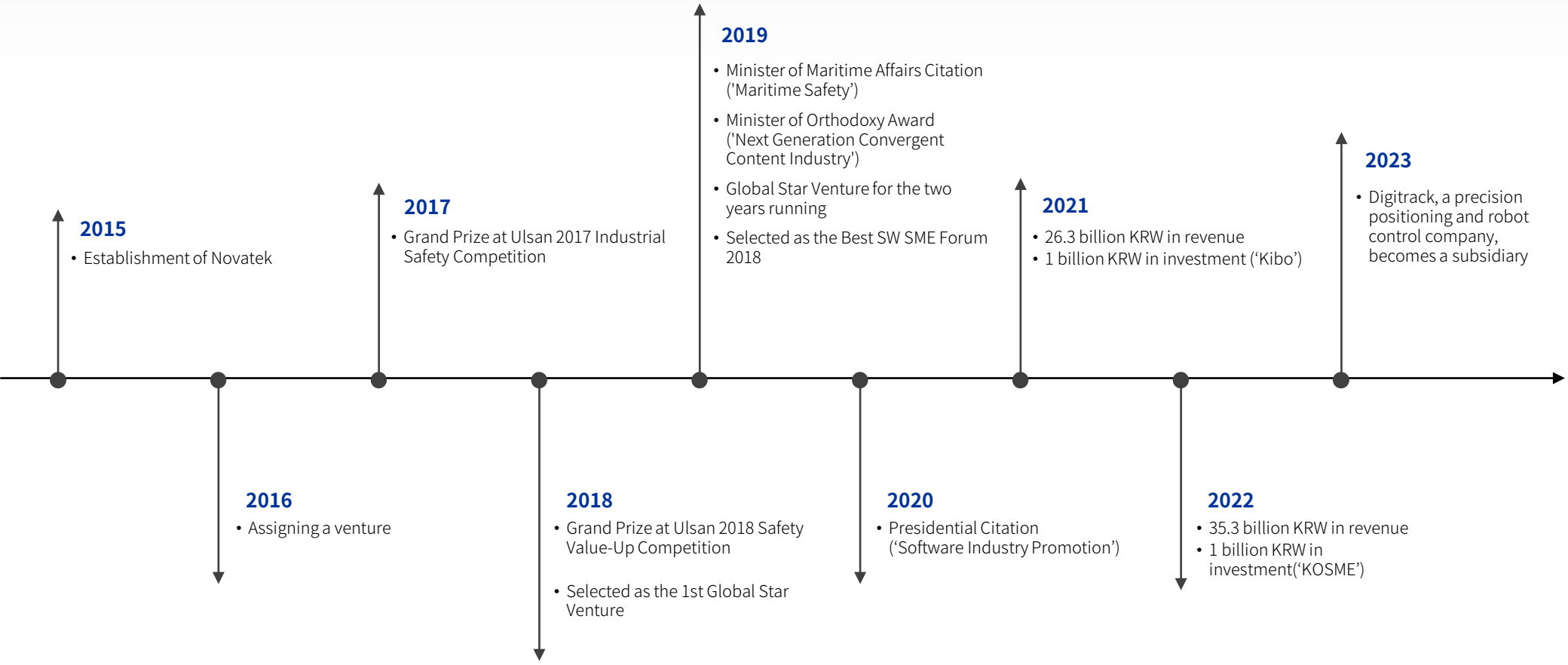
Our values

Novatek, with its core competence in optimal modeling and simulation technology, develops and supplies innovative products and services in intelligent robot systems and digital twins to enhance customer value in terms of productivity and safety.

Core Competency	**Optimal**	Modeling & Simulation
Customer value	**High**	Productivity & Safety
Core business	**Intelligent**	Robot system & Digital-twin

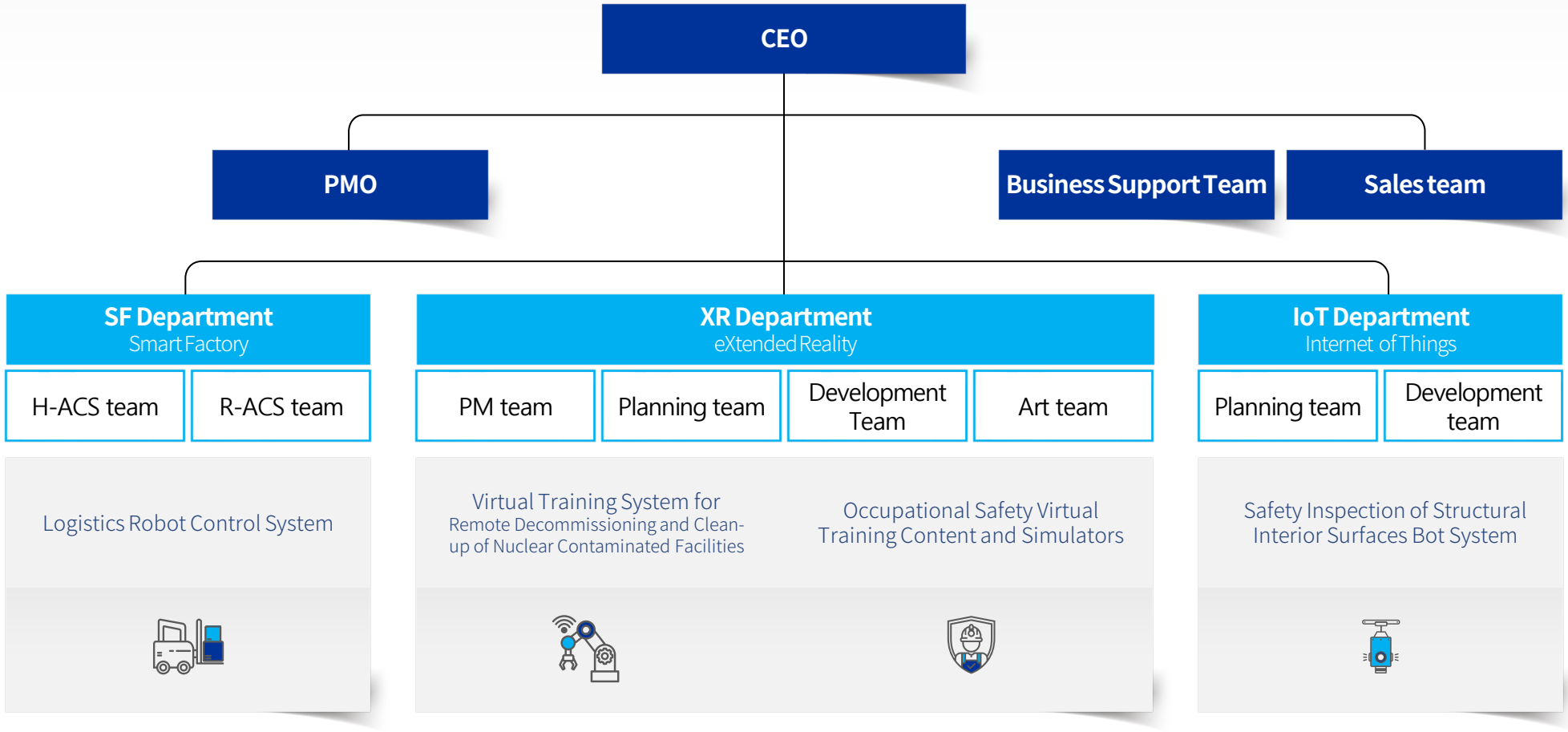
HISTORY

In the eight years since its establishment, Novatek has successfully executed a number of public-private projects in various business fields and is developing innovative products and services to realise customer value based on its proven technical skills and planning and project management capabilities.



Organizations and their represented products or services

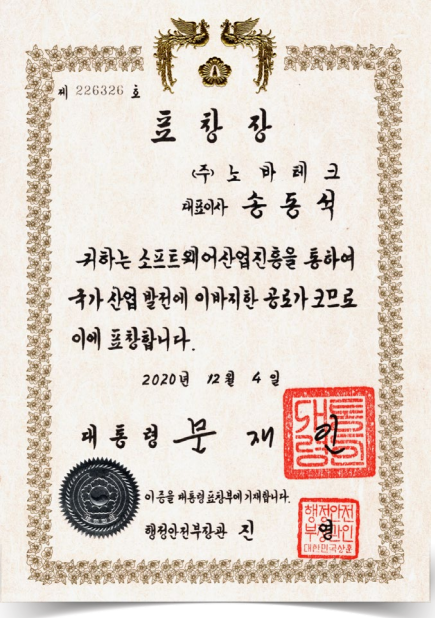
Novatek's Realisers are organised into 11 teams across three business units and are passionate about developing products and services that deliver customer value.



Discipline and intellectual property rights

Since its establishment, the company has been awarded the Presidential Commendation (2020) and the Ministerial Commendation (2019, twice) in recognition of its performance in various projects and contributions to national and community development.

► Presidential Citation 2020



제 226326 호

표 창 장

(주) 노 바 테 크

대표이사 송 동 석

귀하는 소프트웨어산업진흥을 통하여 국가 산업 발전에 이바지한 공로가 크므로 이에 표창합니다.

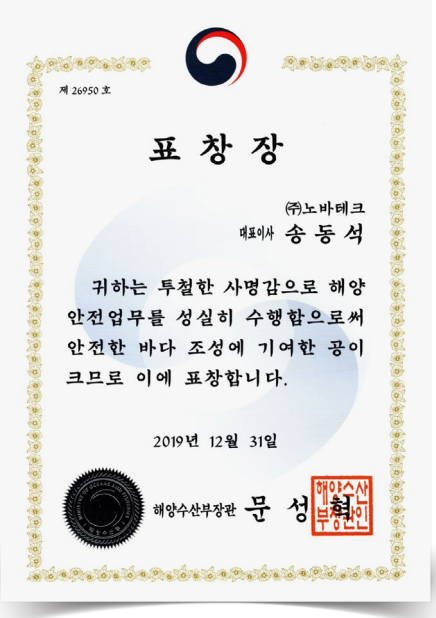
2020년 12월 4일

대 통 령 문 재 인

이 증을 대통령 표창부에 기재합니다.

행정안전부장관 진

► Awarded by the Ministers 2019



제 26950 호

표 창 장

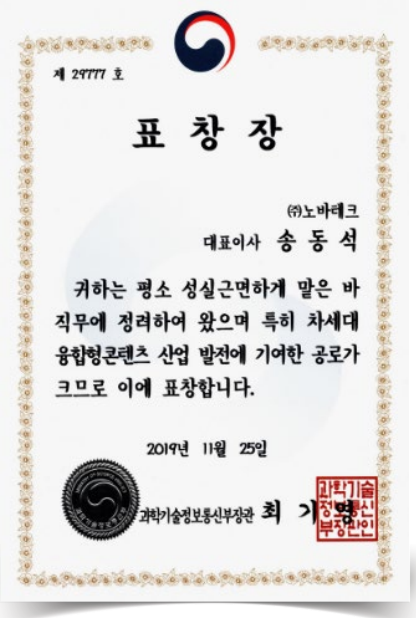
㈜노바테크

대표이사 송 동 석

귀하는 투철한 사명감으로 해양안전업무를 성실히 수행함으로써 안전한 바다 조성에 기여한 공이 크므로 이에 표창합니다.

2019년 12월 31일

해양수산부장관 문 성 혁



제 29777 호

표 창 장

㈜노바테크

대표이사 송 동 석

귀하는 평소 성실근면하게 맡은 바 직무에 정려하여 왔으며 특히 차세대 융합형콘텐츠 산업 발전에 기여한 공로가 크므로 이에 표창합니다.

2019년 11월 25일

과학기술정보통신부장관 최 기 영

► Global Star Company designation

선 정 패

(주) 노바테크

송 동 석

귀사는 창의와 혁신적인 노력을 통해 울산광역시가 후원하는 2018 글로벌스타 벤처기업 으로 선정되었기에 이 패를 드립니다.

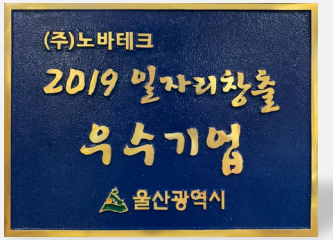
2018년 9월 3일

울산광역시장 송 철 호

► Job Creator of the Year 2019

인 증 패

(주)노 바 테 크



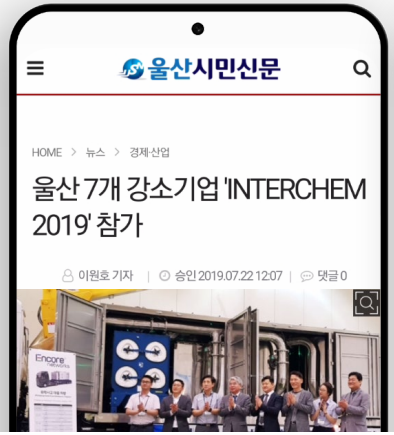
(주)노바테크

2019 일자리창출

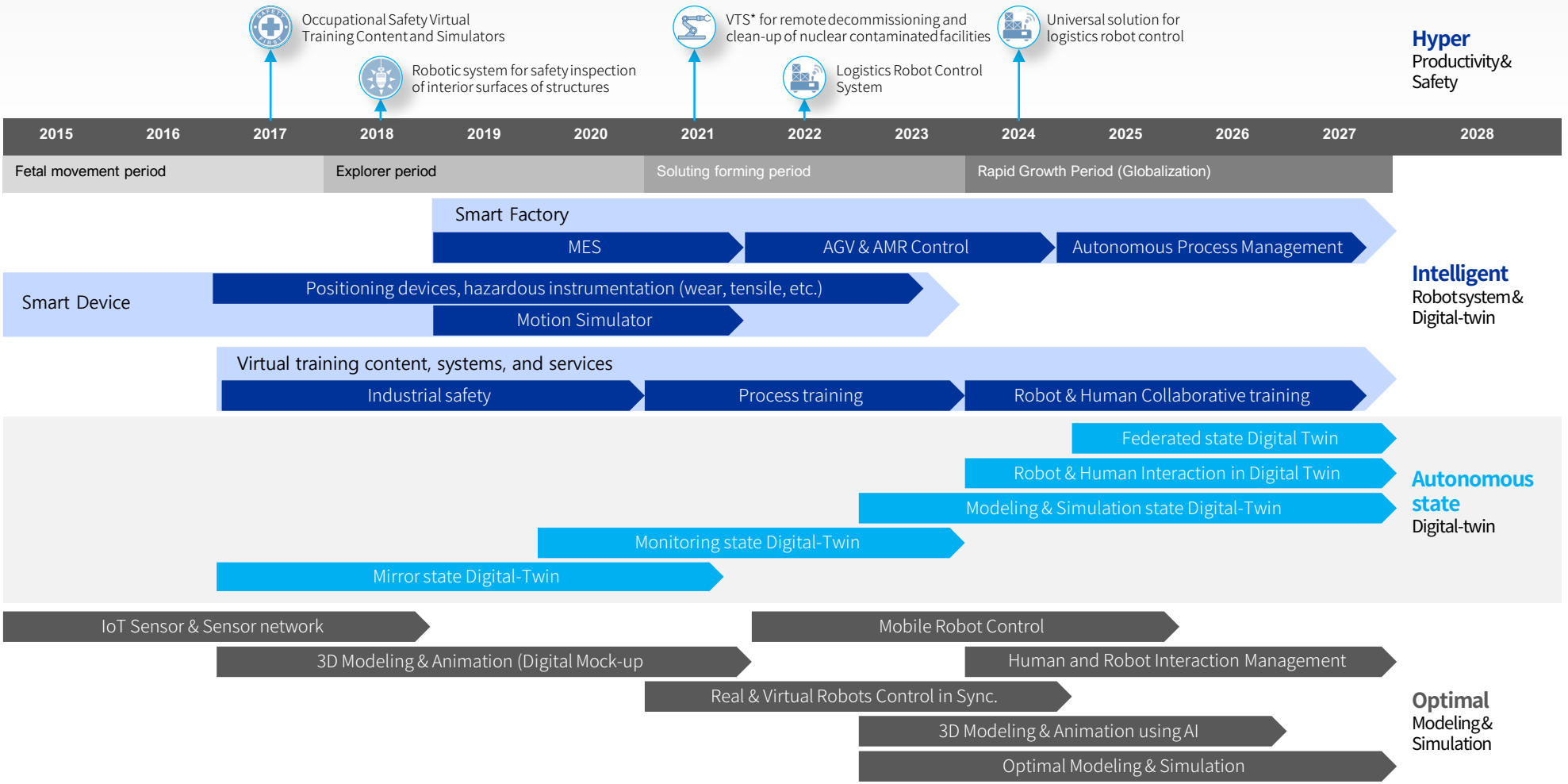
우수기업

울산광역시

What's in the press

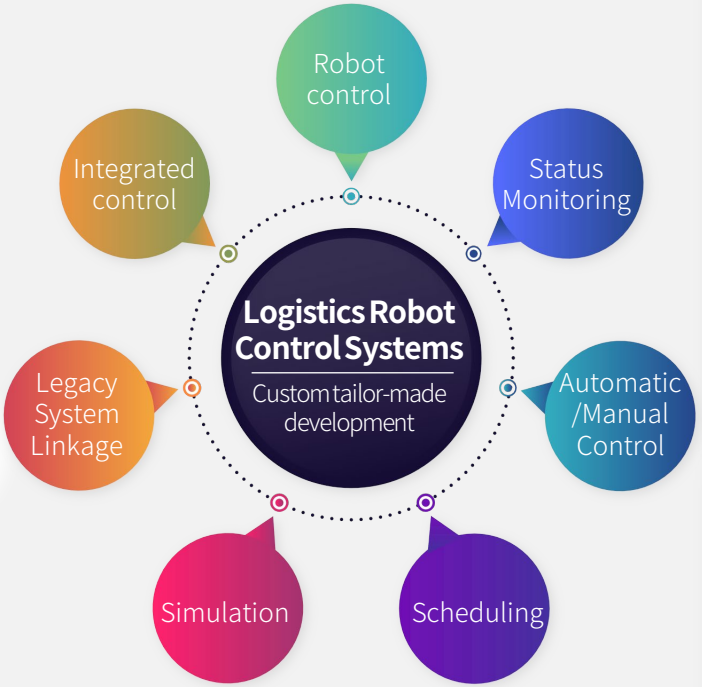


Technology and business roadmap



Logistics Robot Control System

It is a system that can monitor the working status of various logistics robots (AGV, AMR, unmanned fork-lift, etc.) that have recently begun to be actively operated at manufacturing sites or warehouses in real time, and control them in an optimal form and manner that is appropriate to the site situation.



► Use cases

- Real-time monitoring of the working status of logistics robots (AGV, AMR) operating at automobile manufacturing sites or warehouses
- Manually/automatically control logistics robots in the optimal form and manner according to the identified industrial site situation
- Direction of development: Real-time control of the entire factory operation and corresponding various automation processes

► Our Customers

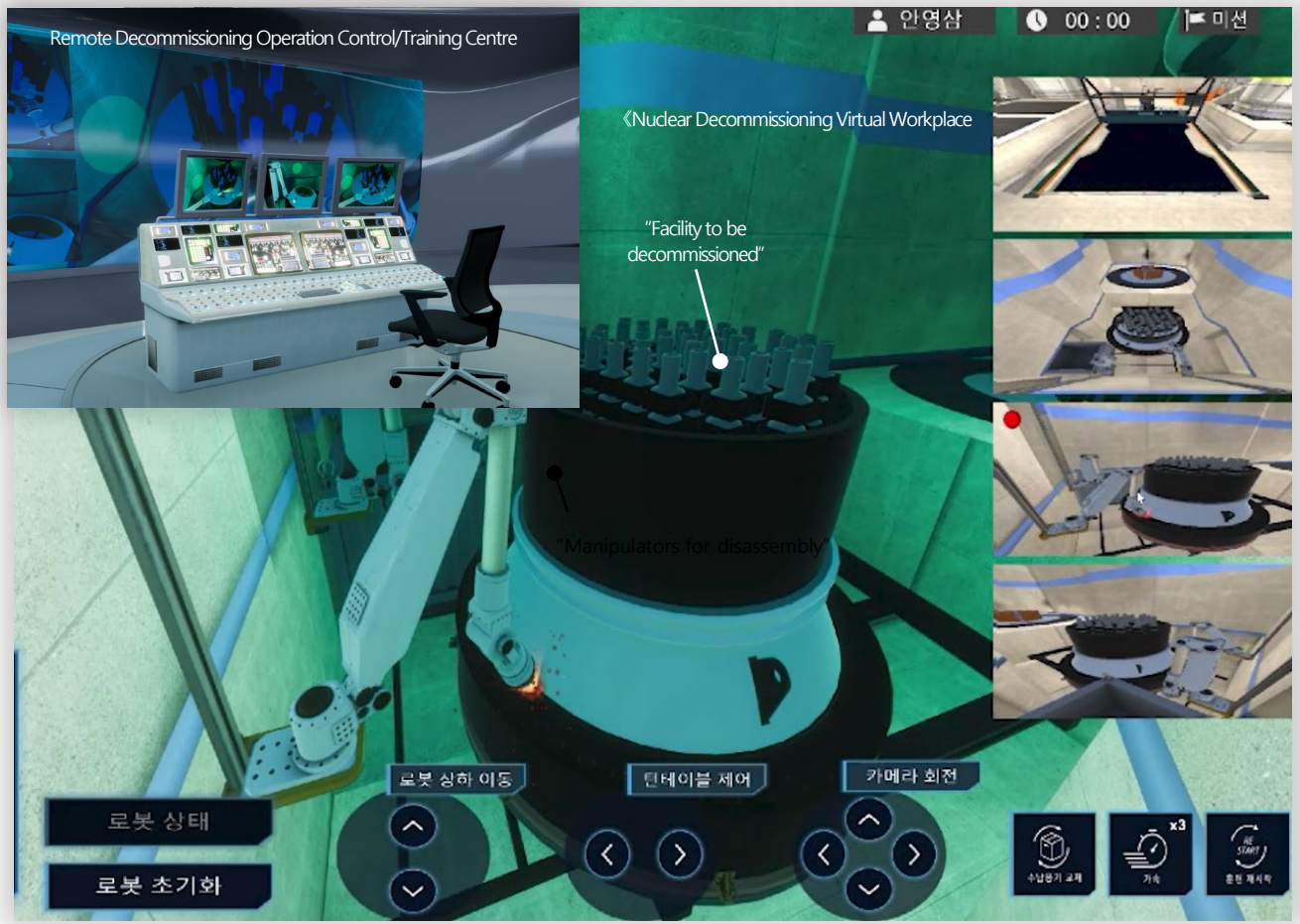
HYUNDAI

Turkey (2020), Ulsan (2021), Singapore Innovation Factory (2022-2023), Georgia, USA (2023-2024), etc.

KIA

Virtual training system for remote decommissioning and clean-up of nuclear contaminated facilities

It is a digital-twin-based virtual training system used to train professionals to perform various clean-up operations on materials and facilities contaminated with high-risk radioactive materials such as nuclear waste and nuclear power plants scheduled for decommissioning, using specially designed robots.



► R&D Projects & Use Cases

- Development of Nuclear Power Plant Decommissioning Virtual Workshop and Force-Torque Response Remote Decommissioning Training System(2020.5~2023.4)
- Development of extended reality-based decommissioning process verification and training system (2023.5~2026.12)
- Commercialisation of technology through establishment of demonstration infrastructure for cutting/decontamination of light water reactor primary core facilities(2023.5~2026.12)
- Virtual reality simulation of robotic work cell system operation for nuclear waste disposal (2023.6~2024.1), etc.

► Our Customers

산업통상자원부 · 한국수력원자력㈜ · KRID · 한전KPS · DOOSAN 두산에너빌리티 · Argonne NATIONAL LABORATORY

Occupational safety virtual training content and simulators(1/2)

Our company produces and supplies realistic safety training content for industrial sectors like shipbuilding, marine traffic, petrochemicals, nuclear power, and automobiles. We utilize advanced extended reality technologies (VR, AR, MR) and extensive field knowledge to create effective materials.t

► R&D Projects & Use Cases

- Development of Virtual Augmented Reality Training Simulator for Radiation Emergency Response at Nuclear Medicine Institute (2021.4~2024.12)
- 2021~2023 XR Flagship Project (Shipbuilding and Offshore Design and Process System)
- 2022 Development of training content for safe work procedures for KOREAZINC.
- 2018~2019 Virtual Augmented Mixed Reality Flagship Project (content for safe construction and safe operation of ships)
- 2017 Hyundai Heavy Industries Safety Experience VR content and training centre construction
- Produced and supplied more than 40 types of XR contents since 2017

Occupational safety virtual training content and simulators(2/2)

When a high level of interaction is required between the trainee and the object in the virtual world, we not only upgrade the realism of the virtual training content to enhance the accident prevention effect, but also produce and supply a dedicated simulator (hardware) that interacts with the content in real time.

► Our Customers

고용노동부 · 과학기술정보통신부 · 해양수산부

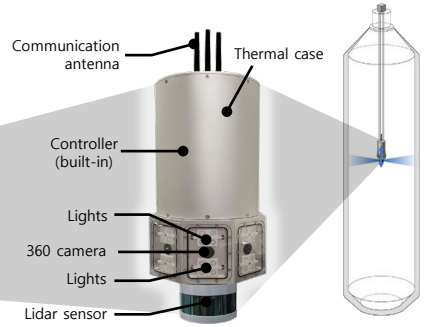
원자력안전위원회 · komsa · KIRAMS

한국광해관리공단 Mine Reclamation Corp. · HD현대 · S-OIL

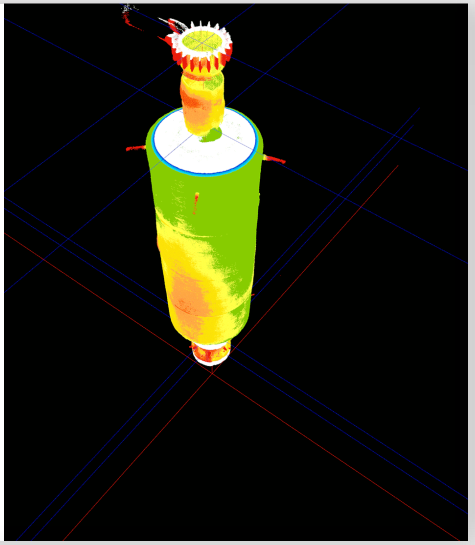
SK 지오센트릭 · LS MnM Metals & Materials · 고려아연

Robotic System for Safety Inspection of Structural Interior Surfaces

Our collaborative robot system, developed with SK picglobal since 2018, enhances safety inspections of internal surfaces. By analyzing point cloud data and photographic images from Lidar sensors, this equipment accurately assesses structural damage levels.

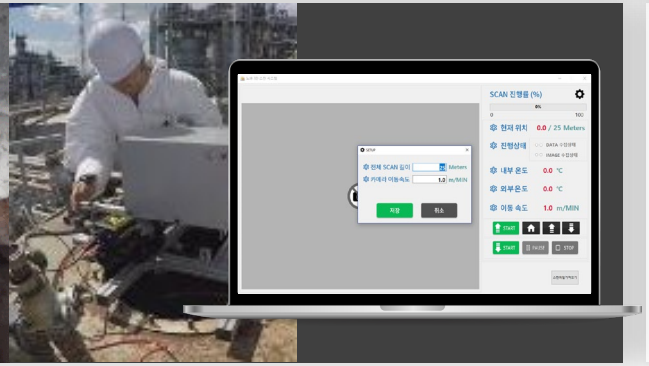


The robotic system ascends and descends in a vertical direction, scanning the interior of the structure



► System characteristics

- Precise safety inspection of refractory structures (incinerators) without human error
- Robotic system that can move vertically inside the structure
- Platform for mounting various sensor devices
- The acquired data can be analysed and visualised using various techniques and, if necessary, displayed using augmented reality devices.



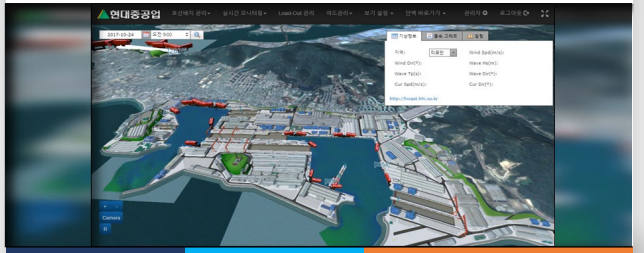
► Our Customers

SK picglobal

Various petrochemical plants

Other product (service) portfolio(1/2)

► HHI Integrated Yard Control System (2017~2018)

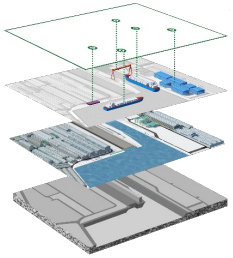


Productivity	Safety	Robot system	Digital twin	Modeling	Simulation	Other ability
●			●	●	●	IoT

- 3D modelled the entire HHI shipbuilding and offshore yard and developed a system to control the entire yard based on real-time information collected through various sensors installed throughout the yard.

- **Key Features**
  - ▶ Real-time weather
  - ▶ Key task scheduling
  - ▶ Real-time work status
  - ▶ Vessel movement simulation
  - ▶ Real-time operational status
  - ▶ Critical facility management
  - ▶ Real-time personnel status
  - ▶ Key Records Management

- **Dynamic digital maps with a multi-layered structure**



► Radiological Emergency Response XR Training Simulator(2021~2024)

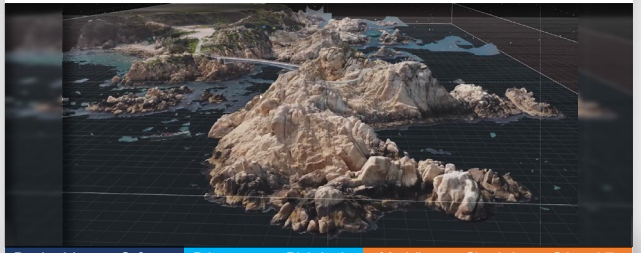
Productivity	Safety	Robot system	Digital twin	Modeling	Simulation	Other ability
●	●		●	●	●	VR, AR

- Project to develop virtual augmented reality training content to improve the proficiency of response medical staff in the event of an emergency such as a radioactive material spill (*Nuclear Safety Commission project)

- **Featured Trainings**
  - ▶ Radiological Emergency Decision Making Virtual Training System (VR-HICS)
  - ▶ VR Triage (for Patients)
  - ▶ Decontamination
  - ▶ Treatment (CPR, chest tube insertion, decontamination, etc.)
  - ▶ 360 VR Demonstration (hands-on treatment/surgery)
  - ▶ Treatment Equipment Usage
  - ▶ AR Instrumentation Training
  - ▶ Situation room operation training

- **Users**
  - ▶ Hospital Stakeholders
    - • Head of Radiological Emergency Medical Support
    - • Support centre director
    - • Doctors, nurses, paramedics
    - • Administrative, clerical, transport
  - ▶ Out-of-hospital personnel
    - • Medical support section chief at field command centre
    - • Head of clinical radiological emergency care centre
    - • Head of on-site radiological emergency clinic
    - • Radiation emergency medical personnel
    - • K-REMAT Team leader

► Tourism Metaverse 'Tour Planet' (2021)- Daewangam Park, Ulsan -



Productivity	Safety	Robot system	Digital twin	Modeling	Simulation	Other ability
●			●	●		Photo-grammetry

- Implemented a metaverse targeting Daewangam Park, a major tourist destination in the region, as a prototype to promote tourism in Ulsan.

- **Key Features**
  - ▶ Images of tourism resources obtained through drone photography are processed using photo-grammetry technology to maximise realism and create a new type of tourism metaverse with three degrees of freedom.
  - ▶ Generate 3D terrain data (drone shooting data → reality capture programme)
  - ▶ Work on data lightweighting for real-time engine processing
  - ▶ Created vegetation and roads on the created terrain.
  - ▶ Walk-through of the entire implemented terrain
  - ▶ Apply LODs to objects based on perspective
  - ▶ Implemented realistic ocean, wave foam, and water reflection effects
  - ▶ Rocky terrain of the Great Rock created with realistic proportions
  - ▶ Crying lighthouse, hanging bridge, labyrinth, mir playground, shopping mall, etc.: realistic enough to resemble real facilities

Other product (service) portfolio(2/2)

► Smart Mooring System
(2018~2019, 2022~)

Productivity	Safety	Robot system	Digital twin	Modeling	Simulation	Other ability
●	●		●	●		IoT

- Developed a solution that monitors the pressure applied to the mooring pole in a port at all times when a ship is mooring and issues an alarm when excessive pressure is detected, preventing damage to the mooring pole in advance and securing the mooring stability of the ship. (※ MOTIE Purchase Conditions Project: 2018~2019)
- Detected mooring traction data is transmitted to the control centre via RoLa communication network

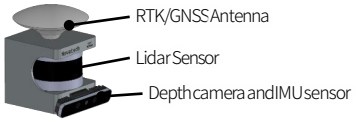
- Since 2022, we have participated in the national K-Testbed platform operation project and are conducting demonstration tests at port sites in cooperation with Ulsan Port Authority..

► Real-time positioning systems for transport vehicles on land and at sea (2018-2020)

Productivity	Safety	Robot system	Digital twin	Modeling	Simulation	Other ability
●			●	●		Positioning Technolog

- Real-time positioning and tracking of transport machinery (relatively slow moving vehicles) on land and sea by flexibly fusing various positioning technologies such as RTK-GNSS-based positioning technology, Lidar odometry technology, camera-based visual odometry technology, and IMU-based positioning technology according to the situation.

4D Positioning System



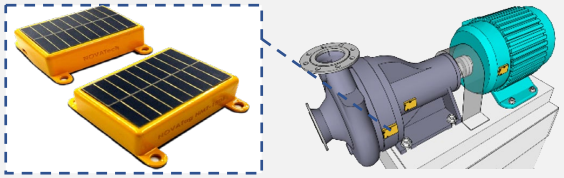
- **User Case**
  - ▶ Supply of Positioning System for USS Korea (2018, commissioned by KETI for ICT Convergence Industry 4.0s Government Project)
  - ▶ Development of shipyard transporter 4D positioning system technology (2019, ICTSW convergence technology advancement government project)
  - ▶ Supplied RTK-GNSS-based ship positioning system (2020, Hyundai Heavy Industries commissioning ship positioning, 5G/LTE communication network)

► Smart Evacuation Indicator Light
(2016-2017, Ministry of Trade, Industry and Energy project)

Productivity	Safety	Robot system	Digital twin	Modeling	Simulation	Other ability
●	●					Powerline comm.

- Eliminate communication dead zones by installing power line communication modules in evacuation beacons at construction/shipbuilding sites

► Energy-Self-Sufficient Predictive Maintenance Sensors (2015, Pioneering Ventures)



Productivity	Safety	Robot system	Digital twin	Modeling	Simulation	Other ability
●	●					Energy self-sufficient

- Sensor solutions that easily attach to machinery such as elevators and motors to proactively predict signs of failure.

NOVATEK

Thank you