Leading Innovation Group



LIG Nex1

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the stature of the Korean defense industry throughout the world and

LIG Nex1 Protects the Security of the Present and **Guarantees the Peace of the Future**

LIG Nex1 aims to provide a comprehensive solution for maintaining peace and security in a global scale.

LIG Nex1 has grown into the foremost comprehensive defense company

of the Republic of Korea that has developed and mass-produced

cutting-edge weapon systems in various fields such as

precision guided munitions, surveillance and reconnaissance, command,

control and communication and avionics, electronic warfare.

Today, the company continues to embark on new challenges

to achieve higher values.

LIG Nex1, which has protected Korea's past and present through

constant technological breakthroughs and innovation,

will establish itself as a leading global defense company that promotes

protects the peace of the future.

LIG Nex1 will take the lead in future defense technologies in the era of the 4th Industrial Revolution.

In the era of the 4th Industrial Revolution led by advanced scientific technologies, LIG Nex1 has strengthened its R&D in strategic defense technologies in major spheres to react to rapidly changing future warfare.

Al-based reconnaissance and surveillance

Hyper-connected and intelligent command and control

High-speed and highpowered pinpoint strike

Manned and unmanned combating

- Use unmanned autonomous sensors and gather threat information on ground, naval, air and space warfare in an omnidirectional way • Use AI and big data technologies to detect and identify signs of provocations
- Share information on friendly and enemy forces via hyper-connected networks • Make command and control processes intelligent and automated via AI
- technologies in order to ensure on-time command and control.

- Use high-speed, high mobility, and high energy weapons
- Maximize breaking effects via pinpoint strikes on key enemy targets

• Improve the stability of existing manned combat systems and unmanned combat systems including robots, drones, and unmanned surface vehicles

- Fulfill combat duties beyond human power



systems

Active cyber response and future defense

New advanced technologies

- directed energy • Narrow technological gaps and promote the innovative development of weapon systems



• Apply advanced technologies to personal weapons, equipment, and clothes to make individual combat units weapon systems • Maximize individual combat power to prepare for reduction in force

• Use guantum technologies and AI to prepare for cyberattacks and electronic warfare • Maximize active cyber response and CBR (chemical, biological, and radiological) capabilities including attack detection and reverse tracing

- Independently develop future technologies in physics, chemistry, biology, and

Innovative and State-of-the-Art Weapon Systems Developed and Manufactured for Modern and Future Battlefields

From precision guided munitions, surveillance and reconnaissance, command, control and communication to avionics, electronic warfare and future warfare, LIG Nex1 provides the peace of the world with advanced total defense solutions for modern battlefields.



PGM Precision Guided Munition

MW Maritime Warfare ISR Intelligence, Surveillance and Reconnaissance C4I Command, Control, Communication, Computer and Intelligence

AEW Avionics, Electronic Warfare

FW Future Warfare **Effectively Strikes Various Targets across** Land, Air, and Sea with Flawless Precision Major Core Technologies PGM integration technology IR/RF/Complex seeker technology Super-high speed/precise guidance Inertial navigation algorithm Environment-friendly thermoplasticity/highenergy propulsion

M-SAM II

Medium range surface-to-air missile that intercepts enemy's ballistic missiles and aircrafts at medium/low altitude



Raybolt

Third-generation medium range anti-tank guided missile, which is vehicle mounted or portable, capable of effectively responding to enemy tanks



Chiron

Portable short-range surface-to-air missile that strikes enemy aircraft, helicopters, drones, etc. approaching from low altitude







M-SAM II PIP interception scene

M-SAM

Medium range surface-to-air missile capable of effectively responding to airborne enemy targets





KGGB (Korean GPS Guided Bomb)

Medium range air-to-surface missile created by mounting a GPS guided kit on a conventional general-purpose bomb to increase range and accuracy





Pegasus

Short-range surface-to-air missile capable of providing protection to mobile troops and key national facilities against enemy aircraft attacking from medium/low altitude



Sea Dragon

Ship-to-surface missile mounted on surface ship to strike enemy's near coastal targets and key tactical ground targets



Red Shark

Anti-submarine missile created by attaching guided missile propellant to lightweight torpedo, which is launched from the surface ship to attack submarines from long distances outside the operating radius



130mm Guided Rocket

Ship-to-ship guided missile mounted on surface ship to strike patrol boats, etc. infiltrating at high speed



Poniard

Guided rocket capable of striking multiple high-speed hover crafts and landing crafts



SAAM

Missile for ship defense that neutralizes various targets including enemy's anti-ship missile attacking our ship



C-Star

Ship-to-ship guided missile mounted on various classes of surface ships, including destroyers, frigates, and corvettes, to attack enemy ships from a long distance





We Defend Our Seas with Maritime Weapon Systems Capable of Accurate Detection and **Covert Strikes**

Major Core Technologies
Complex navigation and guidance and control technology
SONAR and signal processing technology
Inderwater acoustic sensor technology
Farget movement analysis technology
Combat system and fire control technology

Blue Shark

Lightweight torpedo launched from surface ships, maritime operation helicopters and anti-submarine patrol planes to neutralize enemy submarines



KSS-I Combat Management System PIP

Improvement and mounting of outdated KSS-I combat management system using domestic technologies including SONAR signal processing



HUSS(Harbor Underwater Surveillance System) Integrated surveillance system for detection, identification and tracking of approaching surface and underwater enemy targets through integrated underwater sensors and optical sensors installed in key port areas





Blue Shark launch scene

MW Maritime Warfare

Tiger Shark

Wire-guided heavyweight torpedo mounted on submarines to strike enemy surface ships and submarines with pinpoint precision





KSS-III SONAR System

Integrated SONAR system mounted on KSS-III submarines and equipped for full range detection, tracking and analysis of surface and underwater targets



3D Surveillance Radar for FFG

Sound detection equipment mounted on FFG ships for early detection and tracking of, and protection against, enemy threats



We Defend the Skies with Cutting-Edge Surveillance Systems, Capable of Rapid, Accurate, and Far-Reaching Detection

 Major Core Technologies High-resolution SAR image processing Element-level digital radar technology Active electronically scanned array technology Automatic target recognition technology IR image processing technology

Laser detection and signal processing technology TWTA/MPM design technology

Weapon Locating Radar-II

MFRs that detect bombs fired by enemies, reverse-trace trajectories, and inform friendly artillery units of the locations of enemy guns.



Medium-range Air Defense Radar

Three-dimensional search radars that detect enemy targets flying at low altitude on a 24-hour basis and deliver trajectory information to automated air defense surveillance systems



SAR(Synthetic Aperture Radar) for UAV

Synthetic aperture radar mounted on unmanned drones to collect high-resolution image information and detect ground moving targets real-time in both day and night in all weather conditions







Weapon Locating Radar II operation scene

Short-range Air Defense Radar

Three-dimensional radars that detect the trajectories of enemy aircraft and drones flying at low altitude and deliver related information to air defense C2A and strike systems



AESA(Active Electronically Scanned Array) Radar

MFRs that detect, identify, and trace multiple targets on the ground and in the air and are equipped with the functions of SAR and NCTR.



Tac-E0/IR

Tactical reconnaissance image information collection system mounted on reconnaissance planes for acquisition of images of daily/nightly tactical targets as well as real-time image reading and analysis



Rapid and Accurate Command Decisions Based on the Command, Control and Communication System Optimized for Complex Modern **Battlefield Environments**

Major Core Technologies			
Mission planning technology			
Network algorithm			
Interoperability technology			

С С С Ф Command, Control Intellige Communication C4| σ Č ສ puter E 0



TMMR (Tactical Multiband Multirole Radio)

Multiband multirole SDR (Software Defined Radio) that constitutes the combat radio system of TICN (Tactical Information Communication Network)





BTCS (Battalion Tactical Command System) Tactical command system for creation, processing and dispaly artillery battalion firing data



Data Link for UAV A device that receives status and image information generated from unmanned drones and transmits them to the ground control system





ANASIS(Army, Navy, Air force Satellite Information System)-II

Satellite communications terminal that transmits large data & information via military satellites







Education and Training System for Cyber Warfare

A system for creation of an environment similar to those of actual battlefield situations and implementation of cyber warfare education, battle training, evaluation and review



Unmanned Data Link for Ground/Surface

A remote control device that transmits surveillance/reconnaissance information obtained from unmanned ground/surface equipment to the control system



Optimized Operation Capabilities in Battlefields through Localization and Improvement of **Avionics/Electronic Warfare System**

Avionics, Electronic Warfare System

AEW

Major Core Technologies

High-speed signal information detection technology (communication/electronics/ instruments)

Accurate direction finding technology

Adaptive/autonomous digital jamming technology

Multiple beam array high-power transmission technology

KF-X EW Suite & Avionics

An embedded integrated electronic warfare system, components and integrated system that improves the survivability and performance of KF-X (Korean Fighter Experimental)



Land-Based EW system

An avionics device that provides integrated management of airborne equipment and generates image information necessary for the execution of missions



Shipborne EW System (SONATA)

Shipborne electronic warfare equipment that helps to avoid enemy threats by identifying and disturbing electromagnetic waves from radars and missiles





Image of the ground-based tactical electronic warfare system



Avionic equipment for Surion (KUH)

Develop and mass-produce ten types of avionic equipment for mobility, communications, and survival systems of Surion (KUH), the first mobile helicopter developed in Korea.



Unmanned air vehicle systems

Develop key equipment including drone warfare systems, mission equipment (SAR and EO/IR), ground control systems, and data link systems.



Take the lead in newly changing future warfare through unmanned weapon systems, robots, and laser.

• Major Core Technologies Compact hydraulic system design technology Ergonomic exoskeleton design technology Autonomous navigation algorithm Ship design for good seakeeping quality Compact drive arrangement design technology Power transfer mechanism design technology



Military operations including coastal surveillance and reconnaissance as well as response to maritime disasters and accidents through unmanned autonomous navigation



LEXO (Lower Extremity eXOskeleton)

Wearable robots to supplement or enhance the muscle strength of soldiers in future warfare environments



Biomimetrics robots

Robots that are carried by individual soldiers to accomplish surveillance missions in various environments such as downtown, underground areas, and narrow alleys without being exposed to enemies.





Image of soldiers wearing LEXO

FW Future Warfare

Individual combat systems

Study individual combat systems to which advanced technologies such as information processing, situational awareness, and smart arming are applied to maximize capabilities to carry out missions in future battlefields.

Portable Unmanned Ground Vehicle

An unmanned ground vehicle for surveillance and reconnaissance sent to a rough or narrow area, where human beings have difficulty approaching, to collect information using a camera



KW-class optical fiber laser systems

Light source systems for high-energy laser weapons that can be mounted on tactical platforms





R&D Capability

A Leader in Preserving Hope and Peace with Advanced **R&D** Capabilities for Cutting-Edge Weapon Systems



LIGNex1 has outstanding R&D capabilities about 50% of all employees of LIG Nex1 are engaged in R&D, and with 60% of them holding Master's and Ph.D. degrees. Its insistence on 'technology management' throughout the years and experience of developing numerous weapons currently defending the Republic of Korea also constitute the R&D assets of LIG Nex1.

LIG Nex1 applies an R&D process based on SE/M&S for the development of efficient weapon systems, and it has established all design tools, instruments and test facilities needed for R&D. It will further strengthen its privately-led R&D capabilities based on its competence for developing key technologies and experience of business management that it has accumulated.

LIG Nex1 achieved significant accomplishments from self-initiated development of key components of state-of-the-art weapons based on steady investment and efforts. It will continue to lead in the development of key technologies for future battlefields including unmanned warfare and cyber warfare, thereby securing future growth engines.

Efficient R&D management LIG Nex1 is carrying out efficient R&D management including technical data management, configuration management, risk management, and schedule/cost management through the most advanced management system.

Key R&D capabilities specialized for modern warfare environments

LIG Nex1 is prepared for modern and future warfare that is evolving in the direction of 'longdistance precision engagement' based on network-centric operational environment. LIG Nex1 is preparing for a bigger takeoff with its R&D capabilities accumulated through years of taking the lead in the fields of precision-guided munitions and surveillance and reconnaissance systems.

Highest and largest R&D manpower in Korea

R&D infrastructure

Securing future growth engines

through self-initiated development of key technologies

Key technologies

- System design Software
- Signal processing
- Image sensor
- Radio frequency/micro wave
- Integrated logistics support (ILS)
- Dynamic mechanism
- M&S

- Development management
- Technical management
- Schedule/cost management
- Configuration management
- Risk management
- Design data management

Core Competencies

Production Capability

Aiming at 'Zero Defect Rate' through 100 Percent Performance in Complex Warfare Environments

Cutting-edge quality control infrastructure

Korea's largest 1.2km long comprehensive test station, the only domestic guided missile radome performance test station, the largest local 5,400-ton test water tank 16m deep, and the first Korean defense company recognized by the Korea Laboratory Accreditation Scheme (KOLAS) as a globally certified test institution in three categories including environment and reliability: LIG Nex1 is equipped with the premium quality control facilities and is leading the technological advancement of Korean defense industry.

Korea's first environment-friendly business in the defense industry

To fulfill its corporate social responsibility, LIG Nex1 has established the environmental safety and health management system corresponding to the global standards.

Major Certifications

Quality certification

- Defense Quality Management System certification (KDS 0050-9000)
- Quality Management Systems certification (ISO 9001)
- Aerospace Quality Management System certification (AS 9100)
- Capability Maturity Model Integration certification (CMMI Level5)
- KOLAS acknowledgement as a globally certified test institution
- KOLAS acknowledgement as a globally certified calibration institution
- Specialized assembly/test technologies Specialized test facilities Acoustic test tank facility Printed circuit board assembly process Environmental test station High-power module process EMC test station Guided missile specialization process Multifunctional electromagnetic Optical precision assembly/alignment and wave test station drive control Electronic warfare system test station Radome/antenna test station Test facility Near-field test station Radar system integration test station Outdoor far-field antenna (boresight) Guided weapon integration test station array test station Nondestructive test Clean room (constant temperature and humidity facility)

Environmental certification

- Occupational Safety and Health Management System certification (KOSHA 18001) - Environmental Management System certification (ISO 14001) - Green Company designation, etc.











End-to-End Customer Support

Minimize power vacuums through TLCSM (total life cycle systems management)-based ILS development and flawless MRO support systems for operation and maintenance.

Capabilities to conduct business during the whole life cycle of weapon systems (R&D – production - depot maintenance)

LIG Nex1 has accumulated capabilities to manage defense business during the total life cycle of weapon systems consisting of R&D, production, and depot maintenance. It has also operated service centers optimized by military, region, and equipment in order to maintain the best military power and delivered logistics support systems in an accurate and speedy way.

On-site Integrated Logistic Support

LIG Nex1 has performed discontinued parts replacements, localization R&D, repair parts supply, mobile maintenance for keep optimized operation ratio by military, actively working to satisfy our customers with nationwide support teams.

Customer service teams Uijeongbu 1418, Hoguk-ro, Uijeongbu city, Gyeonggi-do Uiieonabu Chuncheor 031-843-7993 Gumi Chuncheon 354-25. Sanhodae-ro. Gumi city, Gyeongsangbuk-do 414-1, Chuncheon-054-469-8440 Gumi ro, Chuncheon city, Gangwon-do Jinhae 033-264-9471 Electronics plant, Sa 602-3, Hyeon-dong, Jinhae-gu, Changwon city, Gyeongsangnam-do 055-546-7925



Global Network

Rising as a Global Leader in the Defense Industry Drawing the World's Attention



First overseas export of guided weapons in Korea LIG Nex1 achieved the major feat of becoming the first Korean company to export cutting-edge guided weapons to South American and Asian countries. It is rising as a global company by creating new business opportunities based on differentiated strategies, such as development and supply of customized products and technology transfer through overseas production and joint development.

LIG Nex1, a leading comprehensive defense company in Korea, is actively promoting its advanced technological competence and outstanding products by taking part in domestic and overseas defense industry fairs and trade shows. Its participation represents part of its continued efforts to develop global markets.

Development of new markets by participating in international defense fairs



American partner network	• European partner network
BAE Systems(USA)	BAE Systems
Northrop Grumman	SAAB
Boeing	Thales
Raytheon Technologies	Airbus
L3Harris	Leonardo
Lockheed Martin	Hansoldt

The Path of LIG Nex1 is the History of South Korea's **Defense Industry**

Powerful Korea Through Our Efforts

LIG Nex1, which was founded in 1976, has continuously set new milestones in the history of Korean defense industry as the Republic of Korea established itself as a military power.

Growing from humble beginnings depot maintenance of American missiles, the company is now in Korea's most outstanding comprehensive defense company, developing and mass-producing state-of-the-art weapon systems to draw global attention.

LIG Nex1, opening up a new future for the defense industry through unceasing technology development and bold investment:

Over 40-year history of LIG Nex1 is marked by both challenges and passion.



Foundation for a comprehensive defense company established

- May. 1991 Acquired the defense business division of Goldstar-Alps Electronics Co., Ltd

- Jul. 1999 First Defense Quality Management System





LIG넥스원(주)

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1976~

Beginning of Korean defense industry, the foundation of national self-defense

- Feb. 1976 GoldStar Precision founded
- Designated as a defense company 1977 Started depot maintenance for Hawk and Feb.
- Nike Military radar production hul
- Mar. 1983 Shipborn started radar GS-710 developed



2000s

Toward self-reliant defense based on self-developed technologies

- Jul. 2000 First shipment of heavyweight torpedo White Shark
- Jun. 2004 Portable surface-to-air missile Chiron developed for the first time in Korea
- Mar. 2006 30th anniversary ceremony and the ceremony commemorating the military usage of domestically developed guided weapons held
- Jul Export of portable radio (PRC-999KE/C) to Indonesia
- Mar. 2007 First CMMI Level 5 certification presented
 - to a domestic defense company

2010s

Future newly opened by IPO and overseas exports

Sep.		Pangyo House (R&D Center) opened
Mar.	2012	First TMMi Level 3 certification presented to a domestic defense company
		First Korean export of C-Star guided missile to Latin America
Dec.		Indigenously developed IR Seeker for Chiron
Oct.		Securities listed (KOSPI)
Mar.		Productivity Management System (PMS) Level 7+ certification granted
Aug		Declaration of compliance management
Apr.	2017	Weapon Locating Radar II determined to be fit for combat
May		Local Air Defense Radar determined to be fit for combat
		Cheolmae II-PIP determined to be fit for combat
		KSS III SONAR system determined to be fit for combat
Nov		Construction of Daejeon House
		(Guided Weapon Research Institute) completed
Nov		Ship-based Haegung surface-to-air missile systems were officially
		recognized as suitable for combat
		Heavy torpedo II was officially recognized as suitable for combat
		TMMR Block II was officially recognized as suitable for combat
Aug	2019	CEO Kim Ji-chan received the Order of Industrial Service Merit (Silver Tower)



CEO's Message

Equipped with greater passions and challenging spirit, LIG Nex1 will take the lead in reshaping the future of the Korean defense industry.

Based on world-class R&D professionals and technological prowess and know-how that have been accumulated for more than 40 years, LIG Nex1, Korea's exemplary defense company, has researched, developed, and mass-produced state-of-the-art weapons systems for ground, naval, and air warfare including precise guided missiles, reconnaissance and surveillance systems, and command/control/communications systems. Across the nation, it has operated plants optimized for R&D and mass-production of advanced weapons systems, as well as overseas offices in the US, Colombia, Indonesia, and Saudi Arabia, establishing solid networks with global defense companies. Based on such optimized infrastructure and cooperative networks, it has delivered the latest integrated solutions for modern warfare.

The long-standing cooperative ties with the Korean military, the Defense Acquisition Program Administration, the Agency for Defense Development, and the Defense Agency for Technology and Quality are LIG Nex1's valuable assets that have enabled it to provide reliable products and stable services.

In the future, LIG Nex1 will further improve its technological prowess and create new growth engines under the vision of 'Design a Safe and Convenient Future'. Based on its defense knowhow and ICT capabilities, it will continuously develop weapons systems for future warfare characterized by robots, unmanned systems, and cyber warfare systems and take the lead in promoting the 4th Industrial Revolution in the sphere of defense industry. At the same time, LIG Nex1 will take another leap forward to become a global defense company that will introduce the excellence of the Korean defense industry across the world.

Moreover, by establishing transparent corporate culture, promoting win-win management, and ensuring flawless quality control, it will solidify its position as a reliable enterprise for both clients and the public as a whole.

Thank you all for your continued support for and interest in LIG Next1. I sincerely hope that you will help and encourage LIG Nex1 to take another leap forward in the future.

Kim Ji-chan LIG Nex1 CEO and President

We share hope based on the value safeguarding the nation and coexistence

LIG Nex1 practices 'shared growth with society' based on the value of safeguarding the nation as well as the sense of mission and responsibility inherent to a defense company.

We also continue to engage in global CSR activities with the intention of repaying Korea's past debt of 'peace.'





1 Safeguarding of the nation and honoring of patriots 2 Volunteer services to improve the residential environment in the Philippines

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Support for 'Korea Reborn' yearbook

We support the publication of 'Korea Reborn,' a yearbook on the achievements of the Korean War veterans from the U.S. and Korea's post-war development, and distribute the books to public libraries, education institutions, etc. in the U.S. in memory of their sacrifice.

Support for Korean War veterans

We support the activities of Asociación de Veteranos de la Guerra de Corea, the association of the Korean War veterans in Colombia, the only Latin American country that sent its troops to the Korean War, to assist its activities related to the conservation of war records and support for the veterans and their descendants, in an effort to deliver hope to the Korean War veterans around the world.

Donation for Colombian disaster relief

We gave donations for disaster relief in Colombia, which suffered flooding and landslides caused by unprecedented heavy rain, to promote friendship between the two countries as a private company.

[Domestic activities]

Safeguarding of the nation and honoring of patriots

Employees of LIG Nex1 and their family members visit Seoul National Cemetery regularly to pay tribute to martyrs and cherish their patriotic spirit by offering flowers and cleaning up the area, while doing their part to improve the morale of military personnel and welfare of their families.

Coexistence with local communities

LIG Nex1 makes contributions and engages in support activities for those in need in local communities surrounding its establishments, including the elderly living alone and disadvantaged youth, to strengthen local partnership.

LIG Nex1 practices 'shared growth with society' by infusing the value of safeguarding the nation inherent to a defense company into its CSR activities.

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We will be the force that protects the self-reliant defense of global peace.

The Vision of LIG Nex1 – which has never ceased to meet

the challenges and innovate to provide the reliable power that protects

the nation, from R&D for cutting-edge weapon systems to their

mass-production – are always looking toward tomorrow.

'A more secure Korea, a more peaceful world'

LIG Nex1's passion for a better tomorrow will continue.

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Pangyo House Tel. 1644-2005

Daejeon House Tel. 042-718-3400

Gumi House 1 & 2 Tel. 054-469-8222

Gimcheon House Gyeongsangbuk-do Tel. 054-715-6130

Jinhae House si, Gyeongsangnam-do Tel. 055-541-5601~5603

Seoul Office Tel. 1644-2005

Jinhae Office Tel. 055-552-8910

Domestic establishments

207 Mabuk-ro, Giheung-gu, Yongin-si, Gyeonggi-do

333 Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do

181 Jukdong-ro, Yuseong-gu, Daejeon

354-25 Sanho-daero, Gumi-si, Gyeongsangbuk-do

1487 Jucheon-ro, Nam-myeon, Gimcheon-si,

P.O.B. 602-4, Chungjang-ro 1, Jinhae-gu, Cheongwon-

369 Gangnam-daero, Seocho-gu, Seoul

2nd fl. KT Jinhae Branch Building, 49 Jungwondong-

Overseas establishments

U.S. Branch Office 1101 Wilson Blvd. Suite 1650, Arlington,

Latin American Branch Office Carrera 11 No 94a-34 Piso 8 Bogota,

Saudi Arabia Branch Office Abdurrahman Al Al-Shiek Street, Al-Salmaniya, Riyadh, Kingdom of Saudi Arabia

UAE Branch Office unit 612 Al Khatem Tower ADGM Square Al Maryah Island

Indonesian Branch Office Menara Mulia Jl. Jend. Gatot Subroto Kav. 9-11

LIG Nex1