


# THE INNOVATING PIONEER FOR A SUSTAINABLE TOMORROW



# Hanwha is embracing new challenges to secure a sustainable future for people and the planet

Established in 1952, Hanwha has grown as one of the major Korean companies and built its reputation as a global company steadily with its founding philosophy of "fostering social growth and prosperity" and the spirit of upholding "trust and loyalty." Those two mottos played a crucial role in the nation's growth and a better quality of life of the people. With decades of experiences and expertise in sectors such as aerospace, energy & materials, finance, and retails & services, we keep diversifying business portfolios and investing in innovation for sustainable growth.

61.4B <sub>USD</sub>

Total sales  
As of 2023

776

Global networks  
As of 2023

103

Domestic affiliates  
As of 2023

72 <sub>years</sub>

Founded in 1952



The innovating pioneer for a sustainable tomorrow

With sustainable technologies and continuous efforts,  
Hanwha Aerospace is keep moving forward to protect  
the planet and create new values

## TOTAL SOLUTIONS

A global  
total solution  
provider from  
aerospace  
to defense

## LAND

No.1 defense company on  
the global stage with second-  
to-none competitiveness  
in product quality and next-  
generation technologies

Firepower · maneuvering · air defense · MUM-T  
Guided missiles · ammunition · laser · navigation

## SEA

No.1 global innovator of pio-  
neering new maritime energy  
ecosystems in a sustainable  
way based on advanced eco-  
ESS technology

Lithium-ion battery systems for submarines  
and ships (ESS), naval vessel engines,  
gas turbine generators

## AIR

Expanding the value chain  
from components to systems  
with independent source  
technologies, and reinforcing  
the reputation in the global  
aviation industry

Electric propulsion systems for aviation  
(ESS · EE · EMA · Hydrogen fuel cell)  
Aircraft gas turbine engines and components  
Engine lease

## SPACE

A total solution provider in the  
space domain with innovative  
and cutting-edge technologies

Space transportation  
Satellite (communication, observation)

## SYNERGY

Hanwha Aerospace will  
expand business and  
create synergy in coordination  
with its affiliates – Hanwha  
Systems, Hanwha Ocean  
and Satrec Initiative.



 Hanwha Ocean

A maritime and shipbuilding  
expert offering tailored  
and exclusive solutions



 Hanwha Systems

A system expert offering tailored  
and exclusive smart technologies  
which are combined with  
cutting-edge defense electronics  
and future ICT innovation



 SI

Korea's sole exporter of  
satellite systems with  
verified capabilities in satellite  
systems development



Every step we took became history. With this historic path,  
Hanwha Aerospace will pioneer uncharted lands  
again with united effort and firm will

## 1952 – 2013

- 1952 Korea explosives co.  
(currently Hanwha Corporation) founded
- 1978 Designated as a defense company
- 1981 First manufacture of aircraft components
- 1984 First mass-production of K55 SPH  
Development of K200 APC
- 1986 Selected as a key contractor for KFP
- 1988 First mass-production of Kooryong,  
130mm extended MRL
- 1990 Contract award for manufacturing GE F404 engines
- 1993 Export of K200 APC vehicles to Malaysia
- 1994 Delivery of the first localized F-16 Engine
- 1995 First mass-production of K77 FDCV, K200A1 APC
- 1998 First mass-production of KAAV
- 1999 First mass-production of K9 SPH (Thunder) and  
SHORAD Chunma
- 2001 Export of K9 SPH to Türkiye
- 2004 First mass-production of K30 Biho
- 2006 First mass-production of K10 ARV
- 2008 First mass-production of K21 IFV
- 2012 Initial-delivery of KUH (Surion) Engines

## 2014 – 2018

- 2014 Contract award for a long-term supply contract with  
US P&W for GTF engine parts  
Export of K9 SPH to Poland  
First mass-production of K56 ARV
- 2015 Hanwha Techwin launched  
Contract award for L-SAM (Long-range Surface-to-Air Missile)  
Contract award for TAipers (LAH air-to-surface guided missile)  
First mass-production of M-SAM launchers  
First mass-production of Chunmoo MRLS
- 2016 Hanwha Defense launched  
Contract award for manufacturing liquid rocket  
engines for Korean space launch vehicle  
Contract award for manufacturing GE and  
Rolls-Royce engine parts
- 2017 Established Hanwha Land Systems  
Established Hanwha Techwin Vietnam Corp.  
Export of K9 SPH to Finland, India, and Norway  
Export of K10 ARV to Norway
- 2018 Company renaming:  
Hanwha Techwin to Hanwha Aerospace  
Hanwha Defense Co. Ltd. launched  
Export of K9 SPH to Estonia  
Successful launch of Korean test launch vehicle Nuri

## 2019 – 2024

- 2019 Hanwha Aerospace USA launched
- 2020 First mass-production of 120mm SPMC and  
30mm AAGW Chunho
- 2021 Export of K9 SPH, K10 ARV to Australia  
Contract award for KM3, Korean river crossing equipment  
Stake acquisition of Satrec Initiative Co., Ltd.
- 2022 Export of K9 SPH and Chunmoo MRLS to Poland  
Export of K9 SPH packages to Middle East countries  
Export of M-SAM II to Middle East countries  
Contract award for Nuri KSLV-II Upgrade project  
Merged with Hanwha Defense
- 2023 Merged with Defense Business of  
Hanwha Corporation  
Stake acquisition of Hanwha Ocean  
Successful 3rd launch of Nuri KSLV-II  
Export of Redback IFV to Australia  
Contract award for a supply contract with  
BAE Systems for MCS
- 2024 Selected as a contractor for next-generation  
launch vehicle project  
Contract award for a supply contract for the  
first production batch of the KF-21 (Boramae) engine  
Export of K9 SPH to Romania



# For a brighter future for our world, we will realize ethical management and the value of sharing under our philosophy of "Go Far, Go Together"

## Move towards a sustainable tomorrow

### Hanwha ESG Visions

#### ENVIRONMENTAL

We take safety and health as No.1 priorities. Enhanced safety and health will ensure the growth of our society and the environmental protection



- Accomplish carbon neutrality by 2050 (Carbon Neutral 2050)
- Develop green technologies and solutions
- Develop more green products

#### SOCIAL

Our goal is to grow and prosper together with our stakeholders, including customers, employees, suppliers and local communities



- Embrace the safety-first culture
- Improve customer satisfaction and communication
- Pursue co-prosperity and shared growth with suppliers
- Engage in social activities and contribute to local communities

#### GOVERNANCE

We pursue corporate integrity by building a corporate culture which enhances sound governance, law-abiding attitude, and ethical management



- Ensure sound governance
- Enhance board independency and diversity
- Build a transparent corporate culture
- Do proactive risk management and actions



Scan here to view  
Hanwha Aerospace sustainability report

## Global Capabilities

We will take another leap forward as a global market leader with superior technology and reliable quality in products


Having successfully exported K200 APC to Malaysia in 1993, Hanwha became the first Korean company to succeed in large-scale defense exports. Since then, we have been continuing to expand our global presence by exporting the K9 SPH and K10 ARV to other customers, raising the international profile of Korea's defense industrial capability.


In 2022, we signed a contract with Poland over the supply of the K9 SPH and Chunmoo MRLS. In 2023, we signed a contract with Australia over the local production of the Redback IFV.



### I OCEANIA

#### Australia

 K9 SPH 2021

 K10 ARV 2021

 Redback IFV 2023

### I THE AMERICAS


#### USA

 F100 engine assembly 1998

 F404 engine assembly 2008

 GTF RSP with P&W 2014

#### Colombia

 Haeseong (Sea-Star) 2013

### I MIDDLE EAST & AFRICA

#### Middle East

 F404 engine assembly 2014

 T/FA-50 components 2014


 Chunmoo MRLS 2018, 2022

 M-SAM 2022, 2024


#### Egypt


 K9 SPH 2022

 K10 ARV 2022

 K11 FDCV 2022

#### Senegal

 F404 engine assembly 2022

 T/FA-50 components 2022

### I ASIA

#### Malaysia

 K200 APC 1993


 F404 engine assembly 2022

 T/FA-50 components 2022

#### Indonesia

 Barracuda APC 2001

 Tarantula APC 2009

 F404 engine assembly 2022

 T/FA-50 components 2022


#### Vietnam

 Barracuda APC 2015

#### The Philippines

 KAAV 2016

#### India


 K9 SPH 2017

### I EUROPE

#### Türkiye

 K9 SPH 2001

#### UK


 Trent 900 engine parts 2005

 MCS 2023


#### Germany

 Engine parts (MTU) 2005

#### Poland

 K9 SPH 2014, 2022

 Chunmoo MRLS 2022

 F404 engine assembly 2022

 T/FA-50 components 2022

#### Norway

 K9 SPH 2017

 K10 ARV 2017

#### Estonia

 K9 SPH 2018

#### Finland

 K9 SPH 2017

#### Romania

 K9 SPH 2024

 MCS 2024



## VISION

# The innovating pioneer for a sustainable tomorrow

Hanwha is leading the future and creating sustainable values as a No.1 global innovator of future technologies

## Total defense solutions

We defend peace and freedom with unrivaled defense capabilities

With our hyper-connected command and control systems, we offer an integrated defense solution in all domains of land, sea, air and space.

- Ground platforms (K9 SPH fire support, Redback maneuverability, Arion-SMET, MUM-T systems, etc.)
- Airborne platforms (UAV, unmanned helicopters)
- Maritime platforms (KSS Jangbogo-III Batch-II, USV, UUV, naval ship engines)
- Precision guided munition (Chunmoo MRLS, TAipers, KTSSM, L-SAM and more)
- Command, control and surveillance (low-orbit satellites, 5G tactical communications, mobile C&C)

## New mobility paradigm driver

We lead the new mobility market with green technologies

We show a new paradigm to the new mobility market with green powertrains and ESS solutions.

- Electric propulsion systems for aviation (Electric engine, ESS, Electro mechanical actuator, Hydrogen fuel cell)
- Electric propulsion systems for ships-submarines (Energy storage system, Hydrogen fuel cell)
- Eco-friendly smart ships (decarbonizing shipping, etc.)

## Aerospace global leader

We are leading innovations in the aerospace industry with future technologies

We are expanding the value chain from components to systems through our own engine technologies and pioneering a new horizon in the aerospace area through Nuri KSLV-II upgrade and next-generation launch vehicle projects.

- Aeroengines (advanced engines for manned-unmanned fighters, engines for unmanned aircraft), unmanned aerial vehicles, engine lease
- Space transportation (KSLV-II upgrades, reusable launch vehicle, next-generation launch vehicle, etc.)
- Satellites (Space Eye-T, observation satellites, communication satellites, navigation satellites)
- Space exploration (mining and utilization of resources in space, and lunar and asteroid exploration)

We are leading the global defense market with cutting-edge technologies and competitiveness



#### K9A1 SPH

Its top-notch performances, including long-range and high-cyclic firing, and swift displacement, are unparalleled.



#### K9A1 SPH ammunition system

The system offers solutions to optimize the performance of the K9A1 SPH, including highly interchangeable and versatile modular charge system, along with trajectory correction fuze technology that significantly enhances projectile accuracy.



Modular Charge System (MCS)

Fuze

Precision guided projectile

Trajectory correction fuze

### Firepower systems

Hanwha offers firepower solutions offering lethality, maneuverability and survivability best in class.



#### K77 FDCV

Command and control is the main mission of K77 to enable the artillery to conduct quick and accurate firing.



#### K10 ARV

The world's first robotic ammunition carrier which delivers ammunition for K9 SPH. Usually, K10 ARV goes together with SPH when it is exported.



#### 120mm SPMC

SPMC features a fire control system, rapid and precise fire support, and maximized survivability.



#### Chunmoo MRLS

Chunmoo, which is ROK Army's core asset, is capable of real-time precision missile strikes on the origin of attack and key targets beyond the range of enemy's long-range artillery.

#### Chunmoo MRLS guided missiles

We have missiles capable of precision strikes based on ranges (short-mid-long) and purposes (tactical-training), which can be used on the same launcher.



CGR-080

CTM-MR

CTM-290

### Air defense systems

By applying evolving technologies, Hanwha provides superior air defense systems to protect air territory against different types of aerial threats.



#### K30 Biho

Biho is a hybrid anti-air weapon system deployed for armored and mechanized military units to counter low-flying air targets.



#### H-SHORAD

Short-range anti-aircraft defense system to respond various aerial threats such as drones and UAVs with its own detection-tracking systems and a range of armament systems.

#### L-SAM ABM

As part of the Korean Anti-Missile Defense (KAMD) concept, L-SAM ABM's job is an upper-layer defense. It "protects the nation at the highest point."







### 30mm AAGW Chunho

Chunho is an anti-air weapon system designed to counter low-altitude surprise air attacks. Its main purpose is to support the close-in air defense of ROK Army and Marine Corps and ROK Airforce's base defense.



### SHORAD Chunma

Korea's first short-range air defense system against low-altitude air threats.



### M-SAM

A vertical launcher loaded with eight Korean mid-range SAM. Its notable strengths include quick and rapid fire.

## | Armored vehicles

With a lineup of world-class armored vehicles featuring superior lethality and maneuverability, Hanwha offers sophisticated capabilities best suitable for combat and troop-carrying missions.



### KM3

An amphibious vehicle designed to operate on both land and water. It will be a key to crucial maneuvering support for future ground operations.



### Redback IFV

Upgraded and localized from the original K21, Redback is an infantry fighting vehicle equipped with the latest IFV technology.



### TAipers

TAipers is an advanced tactical anti-tank guided missile, designed as a multi-platform countermeasure weapon system. The missile is compatible to a number of platforms from airborne ones like helicopters to ground ones (surface-to-surface) like Redback and UCV-L.



### Tigon AWW

A high-performance wheeled armored vehicle featuring excellent maneuverability and additional armor. A variety of weapon systems are installed, which enables operators to operate the car depending on their purpose.



### K21 IFV

This flagship infantry fighting vehicle serves as a key asset of the ROK Army, especially of mechanized infantry units.

## | MUM-T

With AI-based futuristic technologies, Hanwha develops unmanned and robotic systems responding to fast-changing battlefield environments.



### EOD Robot

EOD Robot has superior remote surveillance and reconnaissance capabilities in urban and mountainous areas to detect, and neutralize landmines and IED threats.



### Arion-SMET

Arion-SMET can do a variety of missions remotely, including search and reconnaissance. It helps enhance combat effectiveness and reduce personnel loss.



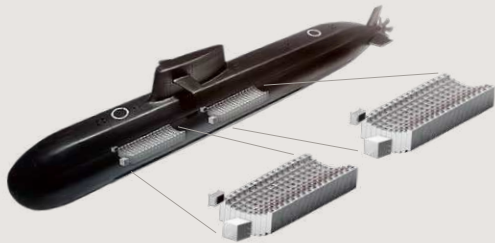
### UCV-L

The main missions of UCV-L are search, reconnaissance, surveillance, and engagement in tactical roads, fields, and unpaved roads. It is operable both remotely and autonomously.

# We keep working on decarbonization through innovative ESS packing and safety technologies to accomplish our ultimate goal of making green ships and sustainable value chains

## | ESS (Energy Storage System)

Drawing upon our plentiful experiences and proficiency in delivering lithium battery systems for submarines and optimized eco ESS for commercial ships, we are gaining reputation in the global ship market as an eco-ship builder in coordination with Hanwha Ocean in ship building (commercial-special naval) and offshore-plant programs.



### ESS for submarines

We are the exclusive supplier of ROK submarines' lithium-ion battery systems to which global safety design standards apply.



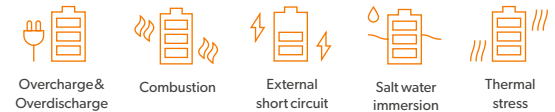
### ESS for ships

Leveraging our expertise in lithium battery system technology developed for military submarines, we are enhancing our collaborative efforts with Hanwha Ocean to extend synergies in the realm of eco-friendly ships.

## World-class safety design

From the unit cell to the lithium battery system, we reflect multiple safety measures in the design from stage-based condition check to responses to failure, ensuring safety even in extreme conditions, such as underwater environments.

## Fully tested under extreme conditions in performance verification tests (safety-reliability)



## | Gas turbines & Generators for naval ships

We offer high-reliable and effective gas turbine engines (LM2500), which are the main engines for ROK key surface ships, and power generators (AG9140RF), enhancing naval capabilities.

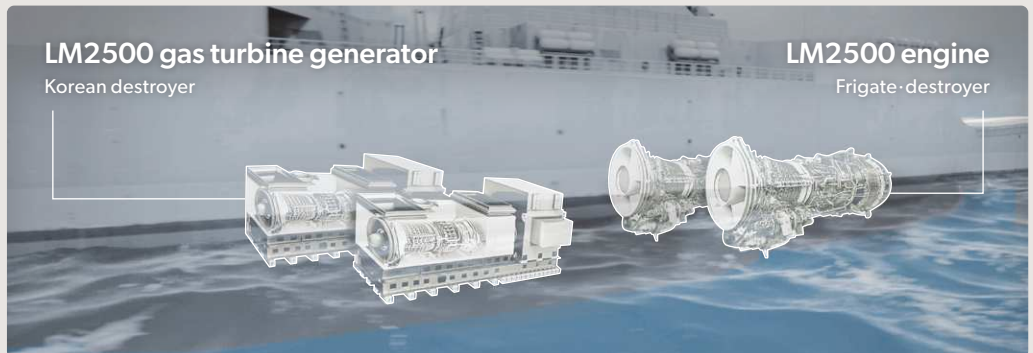
### LM500 engine

Patrol



### LM2500 gas turbine generator

Korean destroyer



### LM2500 engine

Frigate-destroyer



As the only aero-engine manufacturer in Korea, we are leading the global new mobility paradigm with over 45 years of experiences and technology know-hows



KF-21 Block 3



UCAV  
Unmanned Combat  
Aerial Vehicle



6th generation  
Fighters

## I Advanced engines

We offer gas turbine engines and aero mechanical solutions for various fighters and helicopters. We keep working to enhance our engine capabilities by developing an advanced 18,000 lbf-class engine for both manned and unmanned aircraft, specifically for the KF-21 Block 3-class fighters.

### F414 engine

Korean Fighter  
KF-21



### F404 engine

Advanced Trainer T-50,  
Light Attack Aircraft  
FA-50



### T700-701K engine

Korean Utility  
Helicopter  
KUH



### Arriel 2L2 engine

Light Armed  
Helicopter  
LAH



## I Electric propulsion systems for aviation

We will take the lead in the aviation sector with EPS core technologies and advance our portfolios with hybrid-cell propulsion systems, creating a sustainable powertrain market ecosystem.

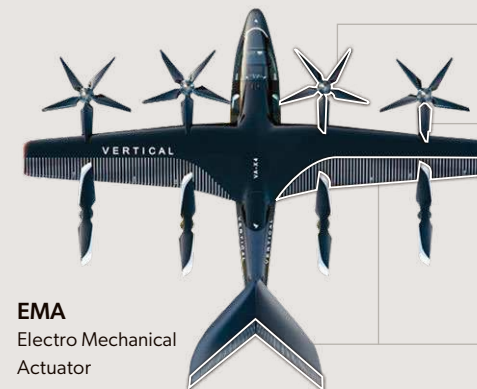
### ESS-EE

We are committed to the development of aviation-specific ESS and EE to provide customized eco-friendly powertrains that meet customers' aircraft requirements for short-range, multi-passenger, or long-distance travel.



### Hydrogen fuel cells

We are developing high-power, high-energy-density hydrogen fuel cells for future mobility by reducing weight and enhancing the performances of current fuel-cell systems.



EMA  
Electro Mechanical  
Actuator



Pitch  
Control  
Actuator



Tilt  
Actuator



Control  
Surface  
Actuator

# Pioneering uncharted ways to expand space territory with firm will for space exploration, we will open a new and sustainable tomorrow

## | Space launch vehicle

Starting with our first involvement in KSR-III Project in 1999, Hanwha Aerospace has been a close partner with ROK government in space development, culminating in its successful third launch of the indigenous rocket Nuri in 2023. However, this is not the end of our work. We will keep pushing the boundaries of our space capabilities from space transportation and exploration to satellite services.

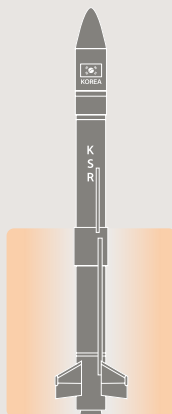
1999–2002

### Korean Sounding Rocket KSR-III

We developed a gimbal engine driving unit for KSR-III, the first liquid-fueled rocket.

**Height** 14 m  
**Diameter** 1.0 m  
**Weight** 6 t

#### Gimbal engine driving unit



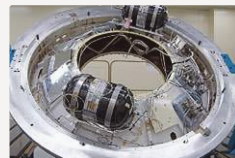
2003–2013

### Naro KSLV-I

We participated in a project for propulsion system development for our legacy space vehicle Naro, the precursor to the Nuri and the foundation for KSLV projects.

**Height** 33 m  
**Diameter** 2.9 m  
**Weight** 140 t  
**Stages** 2

#### Control system



#### Kick motor



2010–2027

### Nuri KSLV-II

Having served as the supplier of key components for Korea's Nuri rocket — the world's seventh independently developed launch vehicle — Hanwha was awarded the contract for the Nuri upgrade project and is in the process of system integration technology transfer.

**Height** 47.2 m  
**Diameter** 3.5 m  
**Weight** 200 t  
**Stages** 3



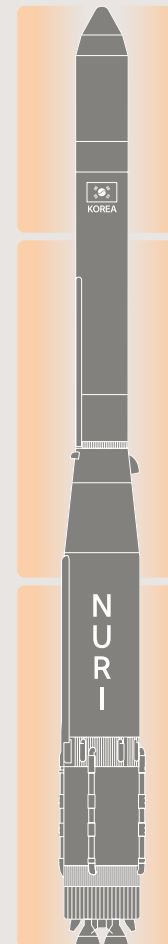
#### Launch vehicle system integration

- Comprehensive manufacturing management
- Stage assembly, final assembly, and testing supervision
- Nuri rocket launch operations



#### Production of core components for stages 1, 2, and 3

- Propulsion supply system
- Engine assembly
- Turbopump
- Engine system valves
- Attitude control system



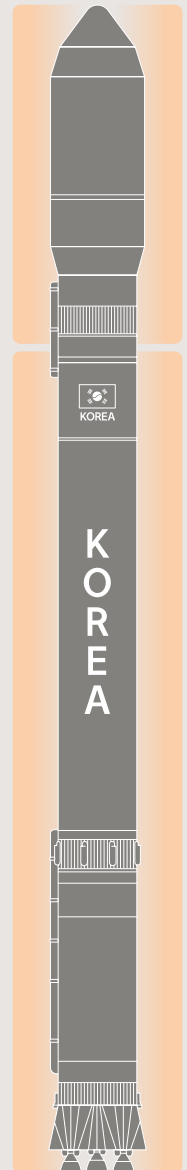
2024–2032

### Next-generation launch vehicle KSLV-III

Hanwha is collaborating with government agencies as the system integrator for the KSLV-III next-generation launch vehicle program, which may be deployed for the launch of medium to large satellites and lunar probes.

#### Joint development and operation of launch vehicle systems

- Launch vehicle operation and requirements analysis
- Launch vehicle mission design
- Design and production of components
- High-precision launch vehicle assembly
- Quality assurance and testing evaluation
- Launch system operations





# SPACE VALUE CHAIN

## I Satellite services

Developing and operating earth observation, satellite communications and satellites bodies



Navigation



Observation



Communication



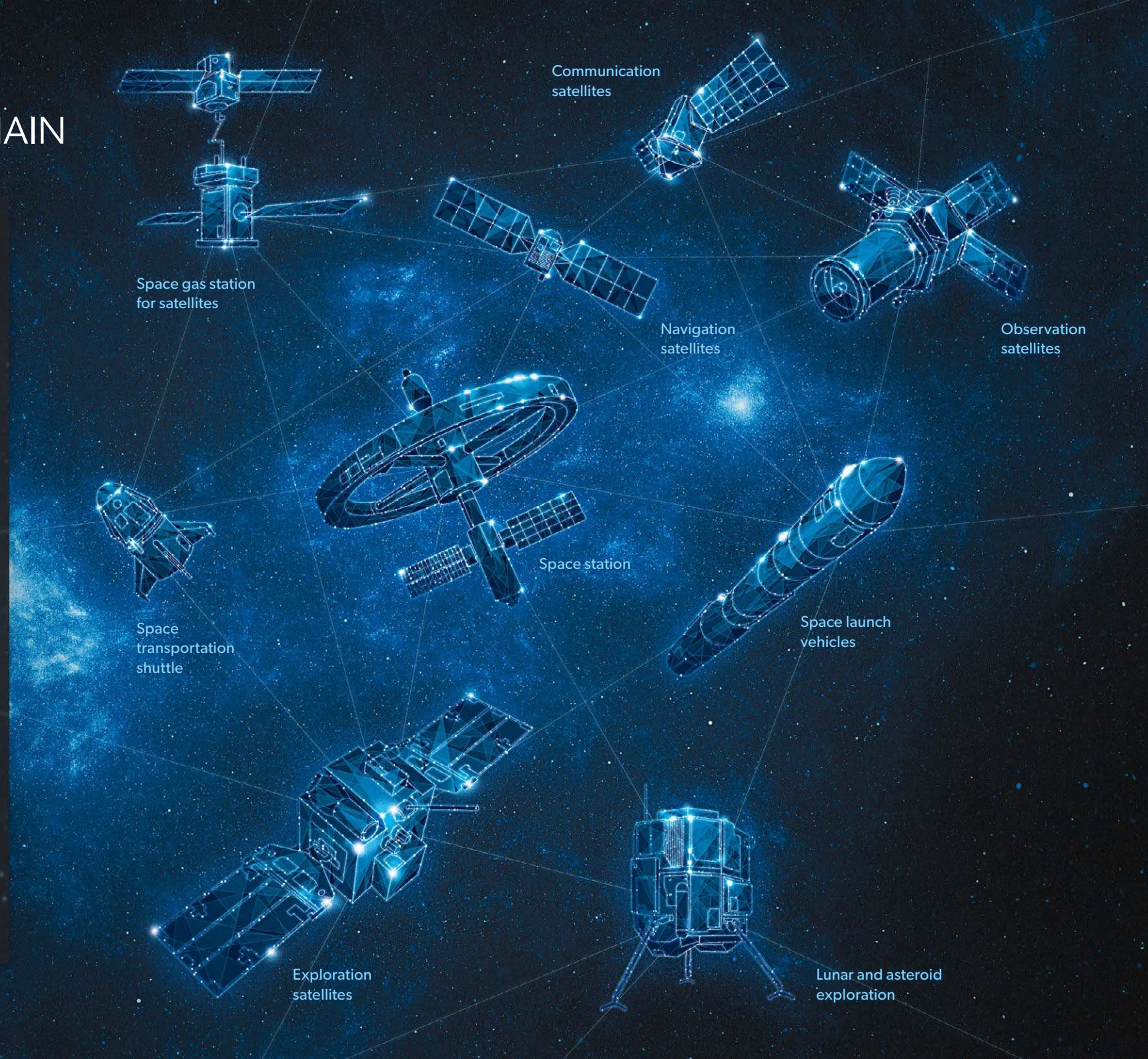
## Space transportation services

Launch vehicle systems, space shuttle



## I Space exploration

Exploring and utilizing space resources, explore lunar and asteroid, space stations





# Hanwha offers comprehensive MRO Solutions for efficient equipment operation, leveraging decades of experience and unparalleled expertise in the MRO field

## | Providing a total package of MRO solutions for optimal combat readiness

MRO (Maintenance, Repair and Overhaul)

Post-delivery integrated logistical support, including maintenance training, technical support, spare parts supply, and performance upgrades

### Performance upgrades and maintenance

Achievement of continuous operational improvement through the enhancement and maintenance of equipment performance according to customer requirements

### Overhaul

Extension of equipment life cycles through complete disassembly, maintenance, and restoration

## Total MRO Solutions

### Spare parts assessment and supply

Evaluation and supply of spare parts necessary for military equipment repairs

### FSR

Field Service Representative

Provision of on-site technical support, preventive maintenance, and training services through the deployment of local technical personnel

### PBL

Performance Based Logistics

Logistics support services based on performance metrics set by the military to ensure stable operation rates of military supplies

#### LAND



K9

K10

K21

K77

K55A1

#### AIR



F100 engine

F404 engine

T700-701K engine

#### SEA



Marine gas turbine engines



## Locations

### DOMESTIC

#### Seoul

Headquarters

☞ Hanwha building,  
86 Cheonggyecheon-ro,  
Jung-gu, Seoul



#### Daejeon

Business establishment

☞ 99, Oesam-ro 8beon-gil,  
Yuseong-gu, Daejeon



#### Boeun

Business establishment

☞ 857, Hoeinnaebuk-ro,  
Naebuk-myeon, Boeun-gun,  
Chungcheongbuk-do



#### Asan

Business establishment

☞ 144 Asanvalleynam-ro  
Dunpo-myeon, Asan-si,  
Chungcheongnam-do



#### Yangju

CS Center

☞ 108 Kkumnamu-ro,  
Baekseok-eup, Yangju-si,  
Gyeonggi-do



#### Yeosu

Business establishment

☞ 411, Sinwol-ro, Yeosu-si,  
Jeollanam-do



#### Changwon

Business establishment 1  
Business establishment in Korea

☞ 1204 Changwon-daero,  
Seongsan-gu, Changwon-si,  
Gyeongsangnam-do



#### Changwon

Bbusiness establishment 2

☞ 799 Changwon-daero,  
Seongsan-gu, Changwon-si,  
Gyeongsangnam-do



#### Changwon

Business establishment 3

☞ 69 Gongdan-ro,  
Seongsan-gu, Changwon-si,  
Gyeongsangnam-do



### R&D CAMPUS

#### Daejeon

R&D campus

☞ 10, Yuseong-daero  
1366beon-gil, Yuseong-gu,  
Daejeon



#### Changwon

R&D campus

☞ 69 Gongdan-ro,  
Seongsan-gu, Changwon-si,  
Gyeongsangnam-do



#### Pangyo

R&D campus

☞ 6, Pangyo-ro 319beon-gil,  
Bundang-gu, Seongnam-si,  
Gyeonggi-do



### OVERSEAS

#### Hanwha Defense USA

☞ 8350 Broad St, Suite 1830,  
McLean, VA. 22102



#### Hanwha Aerospace USA

☞ 5 McKee Place Cheshire,  
CT 06410



#### Hanwha Aero Engines

☞ Lot CN1-02B-4-8, Hi-Tech Park I,  
Hoa Lac Hi-Tech Park, Ha Bang Commune,  
Thach That District, Hanoi, Vietnam



#### Hanwha Defense Australia

☞ Level 18, 535 Bourke Street,  
Melbourne VIC 3000



