

COMPANY PROFILE

GLOBAL VISION SOLUTION PROVIDER **Hanwha Vision**

Hanwha Group

Hanwha will continue to embrace bold challenges for a sustainable tomorrow.

Founded in 1952, Hanwha continues to grow by quickly anticipating and responding to rapidly changing business environments with a balanced business portfolio that includes aerospace, energy & materials, finance and retail & services. As of 2021, we are the seventh largest business enterprise in South Korea and a Fortune Global 500 company.

Hanwha has become a global leader in a number of industries due to its culture of innovation, focused on breakthrough technologies, and sound financial structures.

Sales 2021	Business Enterprise in South Korea Based on total assets, as of end of 2021	Years of History Founded in 1952
69.3 <small>KRW</small> Trillion	TOP 7	70
Domestic affiliates As of end of June 2022	Global Networks As of end of 2021	Ranking on Fortune Global 500 in 2022
93	616	306



BUSINESS SECTORS

-  **Aerospace & Defense**
-  **Finance**
-  **Energy & Materials**
-  **Construction, Retail & Services**

BUSINESS HIGHLIGHT

- **Hanwha Aerospace's** fourth additional launch of the Nuri establishes them as a leading space company in South Korea
- **Hanwha Systems/Hanwha Aerospace** expands into the Urban Air Mobility market (UAM) globally through investment and strategic agreement with Overair, a leading UAM company in the U.S.
- **Hanwha Solution**, selected for its excellence in the field of climate change response in CDP (Carbon Disclosure Project), a global sustainability management organization.
- **Hanwha Q Cells**, was selected as the top brand in the solar power field in the U.S., Europe (9 consecutive years), and Australia (7 consecutive years) while becoming the market share leader in the U.S. for residential (4 consecutive years) and commercial (3 consecutive years) Solar Modules.
- Galleria Department Store (Gwanggyo) won the Global No.1 'Shopping mall of the Year' of the '2021 Versailles Architecture Awards' hosted by UNESCO for the first time in Korea
- **Hanwha Life Insurance** (Vietnam) selected as the 7th most trusted life insurance company

* Source: Hanwha Newsroom

FUTURE VISION

AEROSPACE SOLUTIONS

Keep your eyes open wide Now is the time to explore the space age

Hanwha's thirst for innovation is expanding to space – a promising area for exciting business opportunities. Our efforts in developing technologies and accumulating expertise cover a range of areas include developing engines for space-launched vehicles, examining space for natural resources and energy, harnessing satellite-based communications capabilities and advancing Earth orbit observations and establishing urban air mobility (UAM) infrastructures.

Hanwha's bold moves in space exploration will provide the keys to unlock earth's mysteries and will help us achieve long-term sustainability

Nuri

On June 21, 2022, **Hanwha** succeeded in sending the Korean launch vehicle, Nuri into space. Nuri is a space launch vehicle with 100% Korean technology in all processes, including design, production, and testing. **Hanwha's** involvement in the project included core parts supplied and developed by **Hanwha** and liquid rocket engines developed by **Hanwha Aerospace**, the only aerospace engine company in Korea. The medium heavy engine technology of 75-ton is currently possessed by only seven countries in the world: Russia, the United States, France, Japan, China, India, and Korea.

Danuri

In August 2022, Korea's first lunar orbiter, Danuri, was launched. Danuri is an unmanned probe that flies at an altitude of 100km on the moon and performs lunar observation missions. **Hanwha's** monopropellant propulsion system was used for Danuri to stably enter and settle in the lunar orbit. The high-resolution camera LUTI, of which **Hanwha Systems** participated in the development, creates a map for the lunar lander to land on and takes optical zoom pictures of the area where resources can exist on the moon. The successful launch of Danuri allowed Korea to be listed as the 7th lunar exploration country.



Urban Air Mobility (UAM)

Taking off with a new generation of aircraft, **Hanwha Systems** is remapping the flight path of urban air mobility (UAM). Through a strategic partnership with Overair, a US electric vertical takeoff and landing aircraft (eVTOL) startup, **Hanwha** is developing Butterfly, a personal air vehicle, while working on ground tests for an electric propulsion system, a key technology for UAM.

Butterfly is an all-electric vehicle with patented low-noise technology, which is expected to be an eco-friendly tool for urban transport in the future.

As an influential force in the burgeoning UAM market, we are working toward providing a wide range of UAM solutions for future-friendly air mobility vehicles, services and infrastructure.

FUTURE VISION

GREEN ENERGY SOLUTIONS

Now is the time for fundamental change to lead the transition to clean energy for the future of humanity.

Hanwha is ramping up its response to the challenges of climate change as green energy becomes a global necessity. With already-established expertise in renewable energy solutions for solar, hydrogen, and wind power, **Hanwha** is advancing as a total solutions provider for green energy to power Earth's sustainable tomorrow.

Hanwha is also committed to enriching lives and forging the path to a net zero world. Our focus is on the eco-friendly production of essential materials for semiconductor and secondary batteries for future high value-added industries and energy conversion. We are also building a viable circular economy with research into eco-friendly plastic materials and recycling solar modules.

Solar power

Recognized for its world-class technology and quality, **Hanwha Solutions** has become a global leader in the solar industry. To realize a complete solar value chain, from solar cell and module production to ESS, power plant development and retail energy, we are actively promoting several businesses in major global markets. Ranked first in market share in both the residential and commercial solar module markets in the US, and are now expanding into Europe, Asia and Australia.

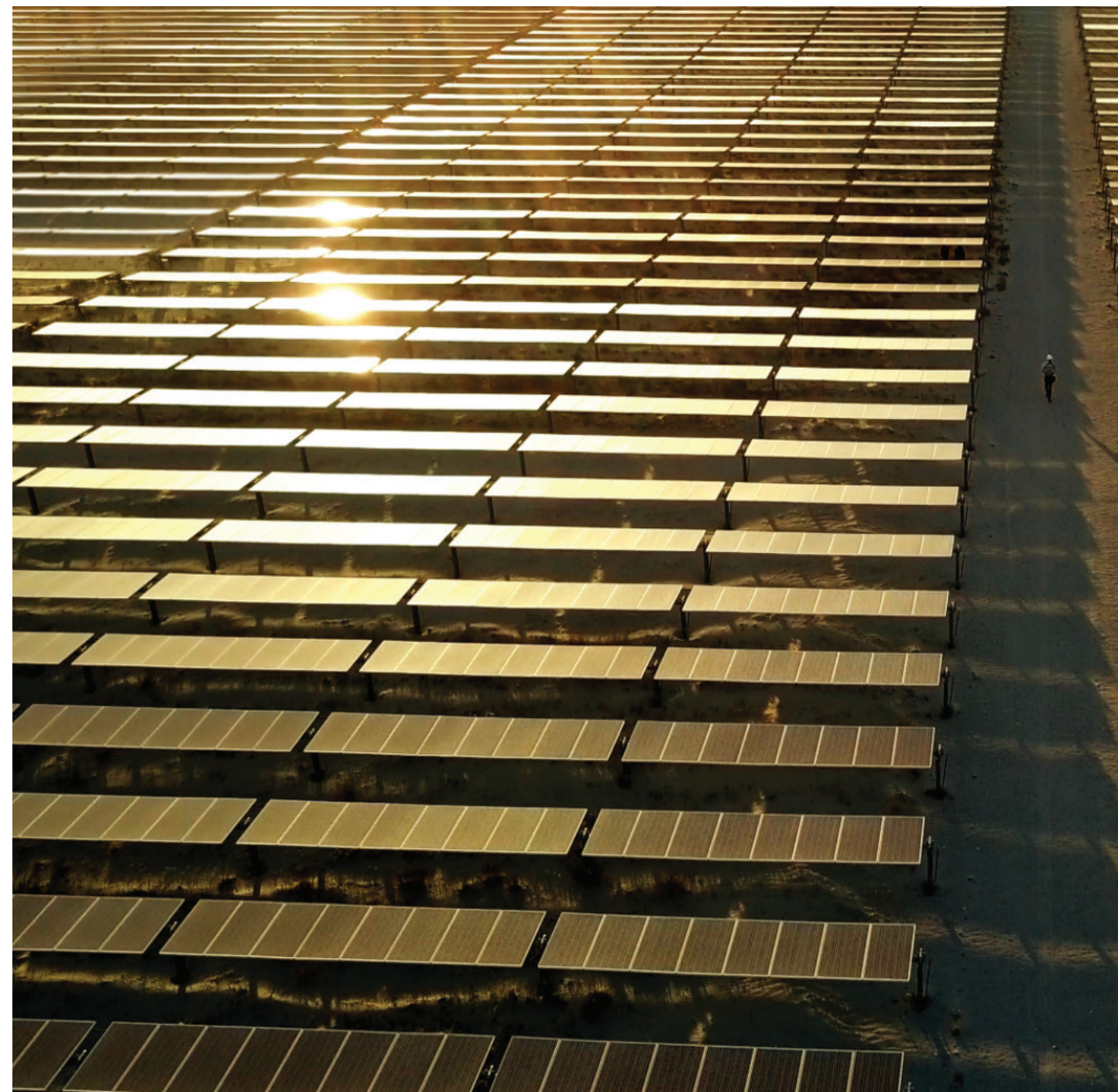
Hydrogen value chain

Hanwha is committed to developing green technologies. We are aggressively investing in green hydrogen as a clean energy source that can significantly help realize global carbon neutrality. By innovating comprehensive value chains, we are expanding into the hydrogen economy, from production and storage to delivery and utilization, including water electrolysis technology and more. With an optimal energy generation solution designed to support a carbon-neutral society, we are tapping into green hydrogen energy's outstanding potential.

Green energy

Hanwha is constructing an eco-friendly ecosystem that covers the newly emerging hydrogen and wind power technologies along with a solar power value chain based on our global technology leadership.

Our solar power business is expanding its scope from the production and sales of solar cells and modules to high value-added services using IT technology. We are currently researching carbon-free hydrogen production using renewable energy such as solar and wind power in the hydrogen energy sector.



FUTURE VISION

SUSTAINABLE ENERGY SOLUTIONS

Invest in future innovation

Now is the time to act for a sustainable tomorrow

To leave a sustainable world for future generations, **Hanwha** is proactively investing in forward-looking technologies and businesses. We believe our breakthrough technologies and businesses will lead future innovation as we focus on convergent technologies such as genetic engineering, biotechnology, biopharmaceuticals and data storage/utilization. We are further researching food and seed gene editing technologies that can relieve food crises and reduce carbon emissions.

Biotechnology

(Utilization of genetic engineering, biotechnology, biodata storage)

Hanwha Impact is invested in an American gene therapy development company, 'Tessera Therapeutics,' and expects epoch-making changes in the life science field, especially in the treatment of various diseases. We are also investing in 'Inari Agriculture,' an agtech – a compound word of agriculture and technology –, with the aim of creating a future where we can successfully address both the food and climate crises.

Food tech

Hanwha Solution is conducting R&D and investment in alternative meat. We invest in 'New Age Meats,' a pork cultured meat development company located in California, USA, and a company that produces artificial meat by extracting stem cells from fish, prepares for the future food business, as well as contributes to carbon emission reduction.



Hanwha Vision

‘Hanwha Vision’ will become your vision partner who realizes a sustainable future and provides new values.

Global vision solution provider

Over the past 30 years, we have established ourselves as a global video security specialist based on world-class optical design, manufacturing, and image processing technology .

We have been ensuring safety and security around the world and across society with products and solutions with outstanding performance, high reliability, and industry-leading cybersecurity policies.

Our growth and innovation started with our customers’ needs. This began with their desire to improve safety and security, now evolving to answer wider business opportunities and challenges. Ultimately, all our solutions enable our customers to reach their goals.

Our investment in innovation and continually pushing the boundaries of what’s possible in video is core to our competitiveness, ensuring our steady success in vision solutions.



History

2011 ~ Present

- 2023.03 – Changed company name to ‘Hanwha Vision’
Announced focus on becoming a vision solution provider
- 2022 – Launched IP audio system
- 2021 – Launched the X AI camera series
 - Launched AI NVR and AI integrated solution
 - Developed AI-based infectious disease response solutions
- 2020 – 30th anniversary of the video security business
 - Launched the P AI camera series
 - Launched Wisenet 7 SoC, a camera series with Wisenet 7 SoC acquired UL CAP (UL Cybersecurity Assurance Program)
- 2019 – UK Government official cybersecurity certification
 - Acquired ‘Secure by Default’
 - Launched the world’s first 55x IR PTZ camera
- 2018 – Established Hanwha Techwin Vietnam manufacturing corporation
- 2017 – Wisenet 5 SoC and X camera series launched
Acquired CES, a UK Government cybersecurity certification
- 2016 – Establishment of Hanwha Techwin Middle East FZE
- 2015 – Launched Hanwha Techwin
- 2013 – Wisenet 3 SoC and camera series with Wisenet 3 SoC are launched
- 2012 – Launched the world’s first 37x IR PTZ camera

1990 ~ 2010

- 2009 – Establishment of Hanwha Techwin Tianjin and Shanghai
- 2008 – Launched the world’s first 37x PTZ camera
- 2005 – Developed advanced intruder automatic location tracking system
- 2004 – Developed Winner 3 Analog ISP chip
- 2001 – Establishment of Hanwha Techwin Europe
- 1997 – Launched the world’s best ultra-low illumination video surveillance camera
- 1993 – Developed Korea’s first Auto Iris lens for CCTV
- 1990 – Started video surveillance business, establishment of Hanwha Techwin America

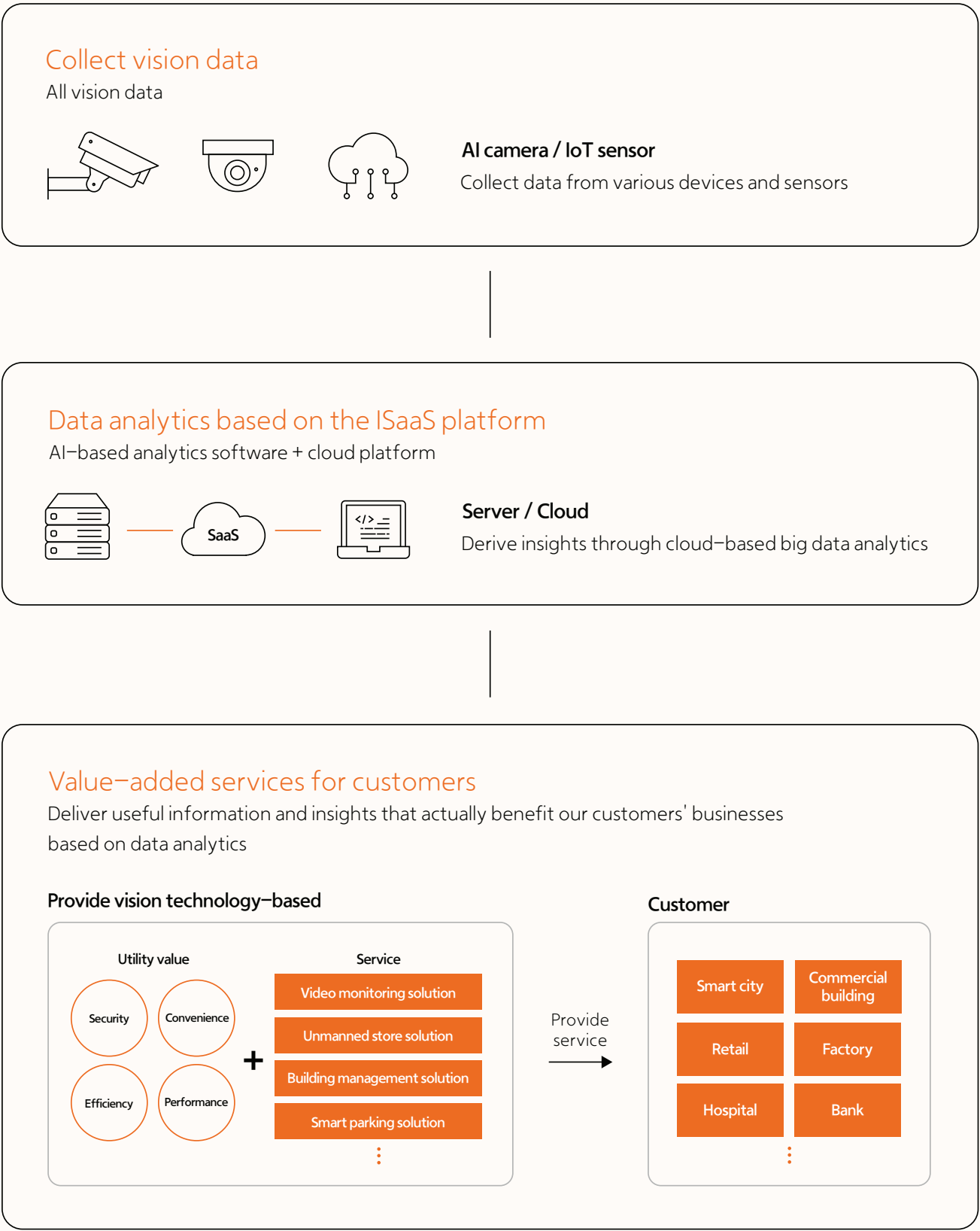
YOUR VISION SOLUTION PARTNER

Hanwha Vision

The future that Hanwha Vision envisions

Today, the video surveillance industry needs more advanced video monitoring and event information collected through security devices in real-time and it is used to quickly search and analyze stored video when necessary.

The future that **Hanwha Vision** envisions is one in which our technology is used to drive further insights. Through our advanced vision solutions, we collect volumes of data, reveal past patterns, monitor the current situation, and inform future predictions through data analysis via the cloud. By combining video surveillance, AI and the cloud, we deliver more valuable insights our customers need to drive business efficiencies and performance.



CORE COMPETENCIES

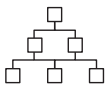
Hanwha Vision has core competitiveness in vision technology based on optical and image processing technology accumulated over 30 years. As image processing technology through AI has become popular, currently, what matters more is how to process information to create valuable information. In response, **Hanwha Vision** plans to provide valuable information in various fields through technology conversion and expansion through AI capabilities and a cloud platform.

Also, we will continue to enhance our competitiveness in cybersecurity.



Vision technology

Hanwha Vision provides high-quality image and vision information through world-class optical and image processing technology.



AI-based intelligent analysis

Hanwha Vision offers AI-based intelligent solutions through self-developed analytics algorithms while providing optimized information to customers by efficiently analyzing vast amounts of data.



Cybersecurity

Hanwha Vision conducts regular security management and verification under the leadership of S-CERT (a dedicated security emergency response team) and gradually enhances security stability for continuous peace-of-mind.



R&D POWER

The R&D headquarters, located in Pangyo Techno Valley, Gyeonggi-do, is the central hub of **Hanwha Vision**'s global R&D. Here, we develop and test various vision technology solutions before introducing them commercially.

In 2022, **Hanwha Vision** established an Innovation Center in the US, with the goal of developing key innovations for the future, such as AI and cloud. Eventually we see these becoming **Hanwha Vision**'s core strengths.

Alongside these efforts, we have established a global AI R&D organization across our headquarters, the US R&D Center, and our AI data lab. This secures our AI full stack capabilities, from AI strategy to data processing, commercialization, and future development.

This accelerates our R&D to give **Hanwha Vision** sustainable competitiveness in an ever-changing market.



GLOBAL NETWORK



Hanwha Vision Global Network

Hanwha Vision has a close relationship with customers and partners around the world across R&D, manufacturing and sales.



Hanwha Vision

SOLUTION LINEUP

Hanwha Vision has integrated solutions to suit various installation needs and environments.

With Hanwha Vision’s wide range of solutions and services, you will find the answers to your security needs that provide you with the business insights required to deliver operational efficiencies.



Camera solutions

Our cameras can collect a range of vision data for business insights and proactive security. They come with network and analog options, and include the P, X, Q, and T camera series.



Recording & Management·Analytics Solution

Data collected through a camera or sensor is recorded on video recorders or a cloud, and this can be monitored in real-time through integrated monitoring software or a viewer as well as recorded video or event confirmation. The vast amount of data is reprocessed through the cloud or analytics software and delivered back to you as meaningful, actionable insights.



Audio system solution

IP audio systems can deliver messages quickly and efficiently and can be utilized as a customized security solution in various environments when combined with a video security system.



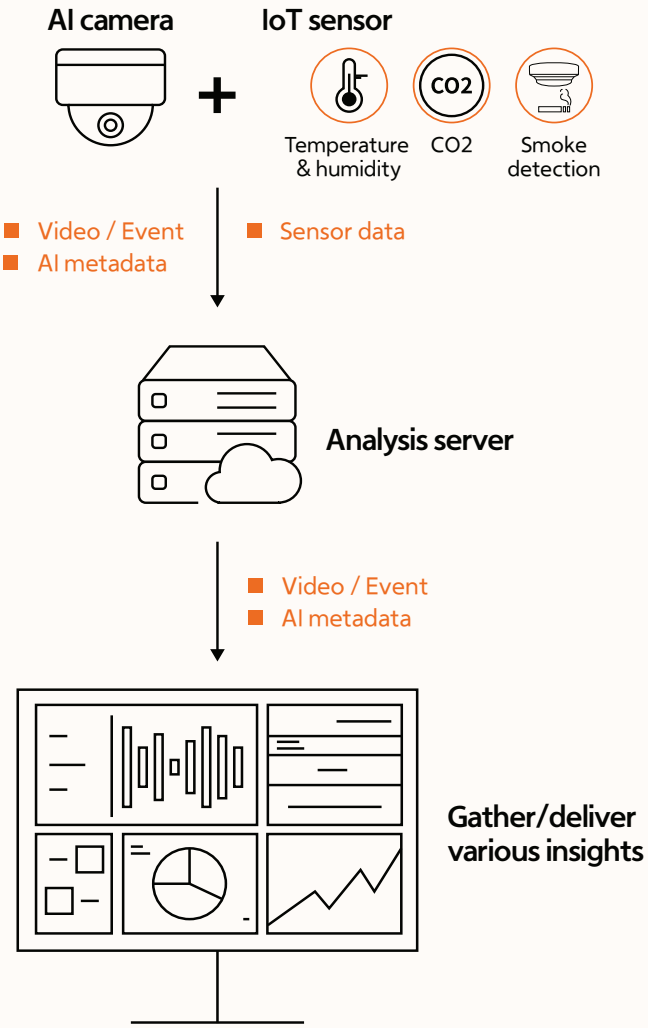
Peripherals

These are peripherals required for system installation, connection, and expansion.

Hanwha Vision

AI-BASED SMART SOLUTION

Hanwha Vision’s AI-based vertical solutions analyze a large amount of metadata collected through cameras and IoT sensors and provide various insights optimized for specific verticals. It can also be linked to a VMS (Video Management System), which enables video monitoring as well as event and alarm management.





Smart Solution

Retail

Information from cameras and sensors installed across a store provide a wealth of insights for improving in-store experience and performance. We accumulate data, analyze, and visualize it through AI to make it easy to see at-a-glance where to improve store management.

Insights

- Number of customers, visit length analysis
- Customer type (gender, age) analysis
- Analysis of the number of customers across multiple stores, as well as length of visit, and heatmap analysis
- Customer flow and checkout queue management
- Store ranking – based on the comparative analysis of the number of customers across various stores
- Retail conversion rate analysis (linked to POS)

City

Quickly see city safety and traffic management insights to improve public security and keep traffic moving. We work with public institutions and government, to provide solutions for rapid responses to incidents in urban areas and improve traffic flow.

Insights

- License plate recognition, map-based traffic management, and counting by vehicle type
- Speed monitoring, traffic flow analysis, speeding vehicle detection
- Illegal parking, U-turn detection, accident detection
- Detection of emergency-stopped vehicles, and obstructions on the road
- On-street parking monitoring

Factory

Our solutions can detect workers not wearing safety gear as well as abnormal workplace situations in real-time by analyzing vision data. We also provide information to boost efficiency through statistical analysis of factory operations.

Insights

- Number of workers and heatmap analysis
- Factory operation status analysis
- Abnormal situation detection
- Logistics and inventory management: loading bays, fleet management

SUSTAINABILITY MANAGEMENT PHILOSOPHY OF Hanwha Vision

We are working to realize responsible management in the environmental, social, and governance aspects.

SUSTAINABILITY

As a responsible member of society, Hanwha Vision seeks to provide fundamental solutions to solve economic, environmental, and social problems and lead positive change through our business, technology, and social activities. Along with this, based on the philosophy of ‘Together, further,’ we will create a better future for all by realizing the value of fair management and sharing.



ENVIRONMENT

Hanwha Vision faithfully complies with the obligations of global environmental regulations to create a sustainable future and is making continuous efforts to minimize the impact on the environment wherever our technology and capabilities reach.

Compliance with international environmental standards

Hanwha Vision abides by the European and Chinese RoHS (Restriction of Hazardous Substances Directive) and observes the restriction on substances hazardous to the human body in our product. We have also obtained ISO14001 certification, satisfying international standards for environmental management.

Green purchase

In order to provide eco-friendly products to our customers, we go through a verification process through the product development and design stages. We have institutionalized the submission of information on hazardous substances in materials when purchasing parts for product production, and we are conducting environmental management capability evaluation when selecting suppliers. We also encourage purchasing environmental-friendly certified products for subsidiary materials consumed in production activities.

Eco-friendly products

Hanwha Vision attaches environmental labels on products with eco-friendly features so they can be easily identified.





SOCIETY

Hanwha Vision respects the human rights of its employees, understands the importance of work-life balance, and seeks effective collaboration through win-win cooperation with its partners. Also, by generating additional value for customers and local communities, we are leading positive change.

Flexible organizational culture and system

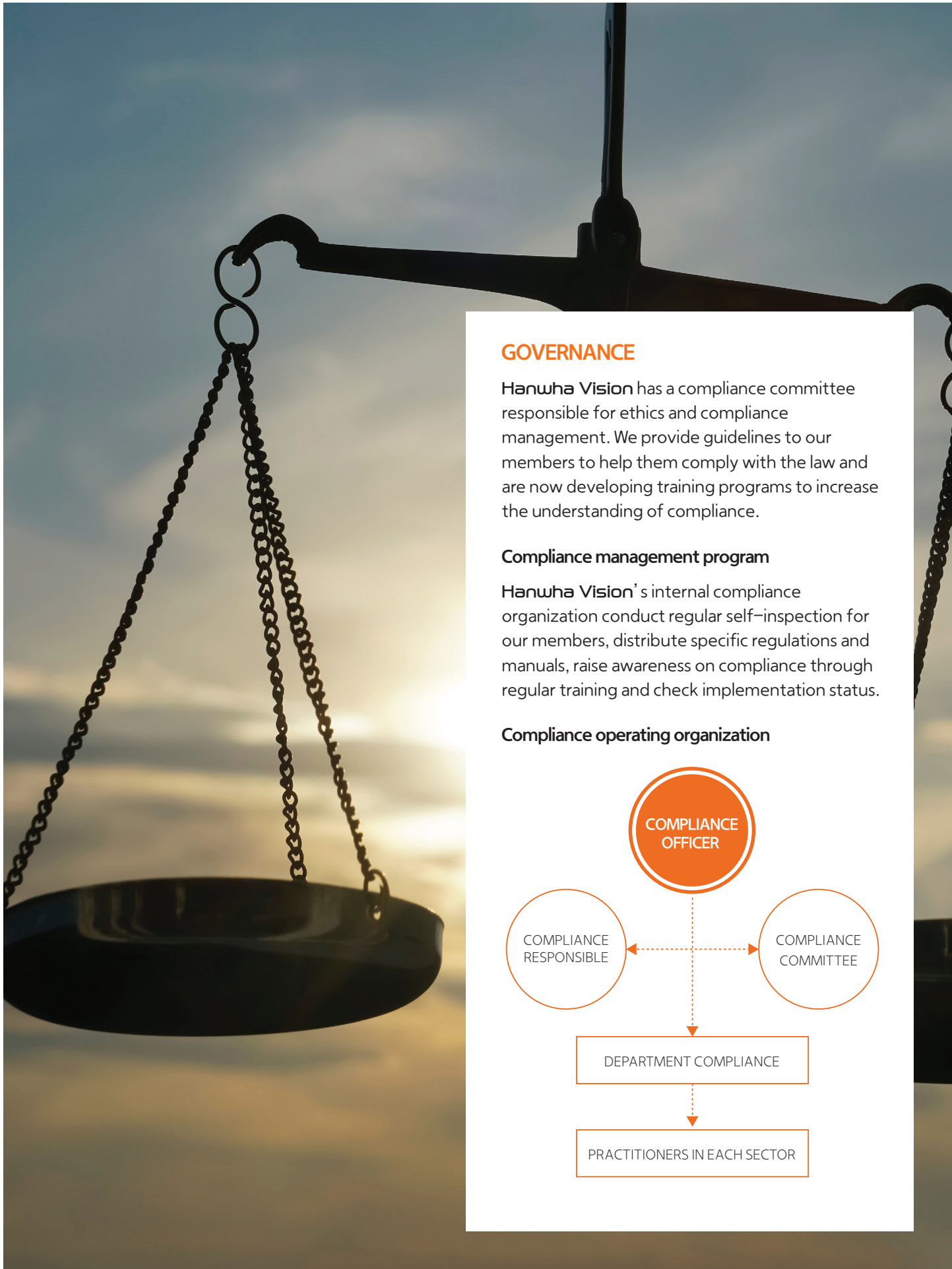
We find ways to create a flexible organizational culture where our members can focus both on their work and life through work-life balance. We have implemented a ‘flexible commute system’ for employees to manage their commuting time flexibly, and various leave systems such as a ‘sabbatical month’ which provides a one-month vacation, a ‘dad’s vacation’ to encourage male employees to use leave after their spouse gives birth, and a ‘development leave’ for self-development.

Mutual growth through win-win cooperation

Hanwha Vision helps SMEs strengthen their capabilities and enter the public procurement market through a ‘win-win cooperation support system between large and small businesses’. We jointly produce products through our vision technology (AI, image process, optical, etc.) and support entrance into the public procurement market and the domestication of imported parts and materials.

Safety and trust-based system

We comply with worker safety standards through ISO 45001 (management systems of occupational health and safety) certification and construct a quality assurance system throughout the entire process of products and services through ISO 9-001 (quality management system) to provide our customers with a sense of trust.



GOVERNANCE

Hanwha Vision has a compliance committee responsible for ethics and compliance management. We provide guidelines to our members to help them comply with the law and are now developing training programs to increase the understanding of compliance.

Compliance management program

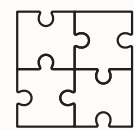
Hanwha Vision’s internal compliance organization conduct regular self-inspection for our members, distribute specific regulations and manuals, raise awareness on compliance through regular training and check implementation status.

Compliance operating organization



Hanwha Vision

CORE VALUES



Technology and solutions

A company that solves personal, corporate, and social problems through advanced vision solutions and creates new growth engines



Innovation

A company that never just stays in the present but seeks answers to a better tomorrow through challenges and innovations



Growth

A company that aims for sustainable growth for ourselves and our customers through investments in the future and cooperation with trusted partners



Sustainability

A company that contributes to the sustainable environment of individuals and society through advanced technology, solutions and services

Hanwha Vision

AWARD HISTORY

Award

- 2023** – Awarded GIT Security Award 2023 for the sustainability sector
- 2022** – Winner in the video security camera category in Security InfoWathch.com Readers’ choice (PNM-C12083RVD)
 - Awarded US Security Today Product of the Year (PNM-C12083RVD) for the AI camera sector
- 2021** – Awarded ADI Best Operations Support
 - Awarded US Security Today Product of the Year for network camera
 - Awarded the Best IP video security, the Best cybersecurity solution of ASTORS Security Awards
 - Awarded the US Secure Campus Award (2 consecutive years) in network camera sector
 - Awarded the Govies Government Security Award (3 consecutive years) in the security camera sector
 - Received the grand prize in Security Awards Korea Brand
- 2020** – Awarded US Secure Campus Award in the network camera sector
 - Awarded the Govies Government Security Award (2 consecutive years) in the security camera sector
- 2019** – Awarded US Security Today Product of the Year for network camera
 - Awarded the Govies Government Security Award in the security camera sector
 - Awarded the ASTORS Homeland Security Award for Best IP Video Security Solution
 - Awarded the grand prize in Security Awards Korea Brand (2 consecutive years)
- 2018** – Awarded Consumer’s Choice in the network camera sector of asmag.com
 - Received the grand prize in Security Awards Korea Brand
 - Awarded the iF Design Award’s (2 consecutive years) main prize
- 2017** – Winner of the UK Benchmark Awards in the video hardware sector
 - X series awarded ADI Best New Product Award
 - Awarded the Red Dot Design Award (3 consecutive years) and the iF Design Award
 - Received the Prime Minister’s Commendation on Information Protection Day by Korea Internet & Security Agency
- 2016** – Received the TTA Test & Certification Awards’ grand prize
- 2015** – Awarded in the Smart Home Camera Red Dot Design Award (2 consecutive years)
- 2014** – Awarded in the Smart Home Camera Red Dot Design Award
- 2012** – Awarded the CES Innovation Award in the Smart Home Camera Red Dot Design Award

