

Checklist for everyday quarantine system

Part 1. Heat screening system using thermal imaging camera

- Does the thermal imaging camera measure temperature on the surface of your forehead?
- Is error range within 0.5°C when measuring heat temperature? How can the error be adjusted?
- Is personal identification possible regardless of wearing a face mask?
- Is it capable of effectively tracking down false identification using pictures and videos?
- Is collected data safely stored? Is there any risk relevant to leakage of personal information?

Part 2. Effective prevention for the spread of different kinds of viruses in crowded spaces

- Is indoor fine dust concentration effectively managed for preventing different kinds of viruses?
 - When fine dust concentration increases by 1µg/m³, the number of people infected by Human coronavirus increases by 2%.
- Is large-size air purifiers that can handle any crowded spaces being used?
- Is anti-biotic / anti-virus photocatalytic filter that are verified by a government institution being used?

Part 3. Effective management method for different kinds of quarantine system

- Is it capable of checking indoor air quality in real-time and automatically control the air purifier?
- Is it monitoring and gathering the status of different kinds of quarantine activities in real-time?
- Is communication and data security being carried out for protecting personal information?
- Is it easy to sync with previous entrance / exit management systems?
- Is it easy to make integrated / individual registration for users?



It is a daily quarantine system solution using AIoT fusion technology to check the checklist all at once.

> Key Features

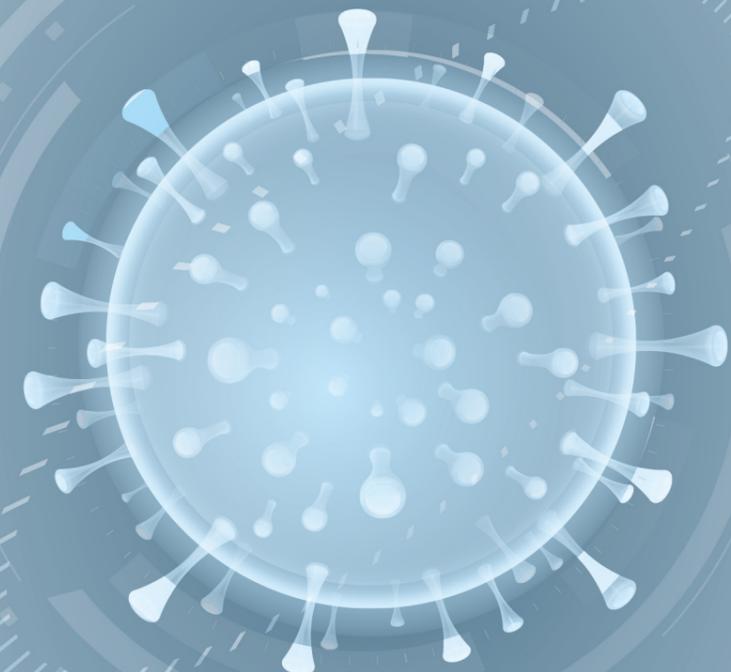
- With low rate of error below $\pm 0.5^{\circ}\text{C}$, accuracy for checking temperature can be improved.
- Detection of people not wearing a face mask based on AI technology.
- Personal identification and heat measurement history is made into a real-time database.
- Generates an alarm when it detects people showing symptoms or not wearing a face mask.
- Automatic operation of anti-biotic / anti-virus cleaner for removing Human coronavirus and influenza virus.
- All data is encrypted using a module certified by KCMVP of the National Intelligence Service

> Patents and Certificates



> Major Vendor

- It has been installed in various facilities such as general enterprises, public institutions, luxury restaurants, museums, and academic facilities.



Detect All Leaks

Leak of a single virus can lead to a pandemic.



Hi.DAL is used for checking whether visitors are wearing a face mask, personal identification, and measuring temperature based on a facial recognition AI engine, providing real-time alerts to the manager in case of detection of symptoms using IoT technology, and managing entrance history. Also, by measuring air quality in crowded spaces, air purifiers can be automatically controlled for disinfecting aerosol type Human coronavirus and influenza virus.



Real-time central control / management using dashboard.



Monitoring for checking if people are wearing a face mask, personal identification, heat measurement, and detecting symptoms.

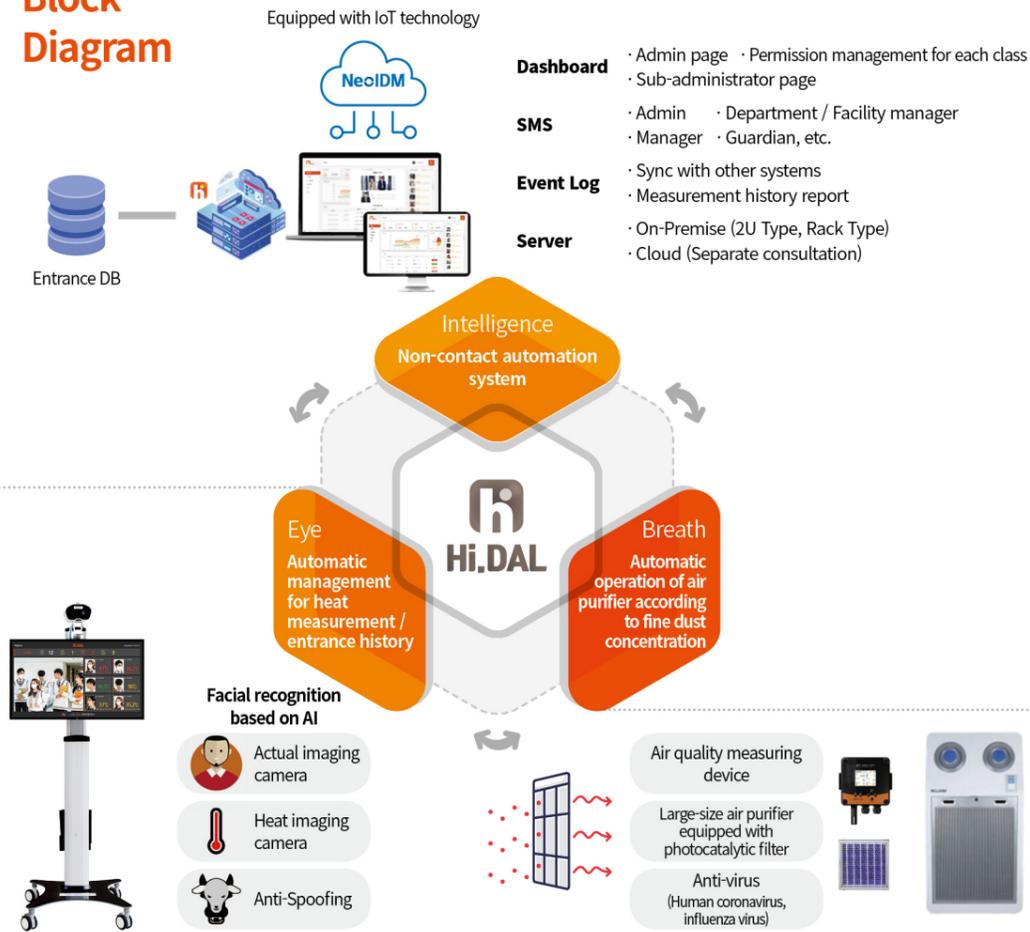


Heat measurement / history management automation for daily quarantine system.



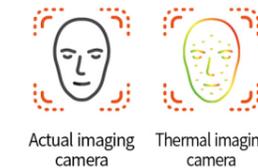
Operation of anti-virus purifier based on IoT by detecting indoor air quality.

Block Diagram



Hi.DAL Intelligence

- Equipped with domestic IoT technology (NeolDM) awarded with the KSWA Korea Software Award by the Ministry of Science and ICT
- Real-time measurement status management, control, alarm
 - Status monitoring for time / identification / face mask application / heat measurement for every visitor
 - In case of detecting people with symptoms, real-time alarm is provided using the SMS / status board.
 - Remote device control (power, wind, SW update)
- Permissions management for user and device organization
 - Individual / Integrated registration function for observation target
- Installation position management for cameras and cleaners
 - Management by registering the floor plan on the dashboard
 - It is used for figuring out the movement line when registering multiple devices.
- Encryption of all data (ARIS 256 or AES 256 encryption method is applied) and communication encryption (X.509) for protection of personal information
- Sync with previous systems (additional charges apply)



Actual imaging camera Thermal imaging camera



Hi.DAL Eye

- Personal identification using AI engine and automatic monitoring on wearing face mask and heat measurement
- Equipped with domestically-made high-resolution (384*288) thermal imaging camera
- Prevention of false entrance using image and video (anti-spoofing)
- Accurate temperature measurement and automatic error correction using black body
- Encryption of all data (ARIS 256 or AES 256 encryption method is applied) and communication encryption (X.509) for protection of personal information
- Real-time entrance history and heat measurement management
- Holding and application of patent technology relevant to heat monitoring using thermal imaging (Application No.:10-2020-0064524)

Hi.DAL Breath

- Equipped with anti-virus photocatalytic filter provided by the Korea Institute of Construction Technology
 - Removes more than 99% of viruses (colon bacillus, salmonella), Human coronavirus, Norovirus, and influenza virus (flu)
 - * Reference: press release by Ministry of Science and ICT
- Wide-range space management from 244m² to 1653m²
- Indoor air quality measuring device certified as 1st class by the Ministry of Environment
- Reduction of installation costs using simple network connection using LTE modem (optional)

