**SEAWOLF**
*Ghost Weapon*

## INFLATABLE
# DECOY SYSTEM

*Regeneratory   Alacrity   Redundance*

Orchid Mantis disguises like tassels of orchid to protect oneself from enemy, and then deceive their prey to hunt.

"Orchid Mantis's fancy mask makes more attraction from insect such as butterfly."
– Macquarie University in Austrailia

"Orchid Mantis can be found and attracted about 30% more than actual tassels of orchid."
– BBC in United Kingdom

# In the future

Disperse to extensive and multiple place, and recover from preemptive attack - **Regeneratory**

Deploy appropriate military at specified time and place - **Alacrity**

Replenish rapidly even though military power is extincted in some place - **Redundance**

– According to An Army Transformed :
USINDOPACOM Hypercompetition and US Army Theater Design
from SSI in July 2020.

# Contents

Dear customer and sir. I am pleased to meet you.
I am Kim, the CEO in charge of this Decoy project.

I'd like to say that the natural orchid mantis used in the cover image, where imitation surpasses reality, is a good summary of the business our company is focused on.

I remember that it was 8 years ago, 2013.
We have developed a Naval Decoy using radar reflectors at the request of a Naval unit. The key technology of the project at the time was radar deception.

However, at that time, the target detection technology of guided missiles had advanced to the stage of satellite tracking, thermal image tracking, and unmanned control strike, and to put this in analogy, the radar deception technique at the time was like getting the result of a swarm of bees leaving because of the orchid flower. Therefore, the conclusion of the solution I came up with in response to the ever-evolving technologies is as follows.

"The Presence of Trap"
First of all, you have to actually make the real trap.
This means that the satellite imagery has to make it appear that the actual trap is present. In other words, you must have a decoy with a mechanical mechanism similar to that of a real ship, which is capable of disrupting guided missiles when they approach the ship.

After Naval Decoy in 2013, We look ahead growth of decoy such as defense solution and evasion with strategy in the future In December, 2018, We got a request for system development of decoy from the Korean government. At this point, we are on completion of K1A2 in System 2 decoy development.

"Orchid Mantis to incapacitate high-technology weapon, Advanced analysis system to incapacitate decoy"

Thank you for your interest, Thank you.

# 1 Level  Fixed Type

US joint chiefs of staff(USJCS) and US army makes decoy as an official strategy including deception during attack and camouflage during defense for tactical operation. Also, they include decoy in organizational equipment. After end of training, they analyze observation, and detection results. With the result, they keep developing and building new decoy for strong force integration.

**Level 1 decoy is focused on defense.**

The decoy is operated by a blower, and can detect from night vision devices and thermal observation devices partly. Technology of realization is completed, we can make any type of decoy such as combat plane, tank and missile.

## 1 Level  Products

### Tracked Vehicle Decoy
: K1A1  K1A2  K9  K21  BMP3 ·············

| | |
|---|---|
| • **Purpose** | To deceive enemy |
| • **Color** | Military Standard Camouflage Color |
| • **Size** | BMP3 Actual size within ±5% Tolerance |
| • **Weight** | Below 80kg |
| • **Way to Operate** | Blower(need continuous electric power supply) |
| • **Material** | 1 Layer |
| | – Tensile Strength : Higher than 600N (ISO 13934-2) |
| | – Tear Strength : Higher than 35N (ISO 13937-2) |
| | – Weather Fastness : Higher than Level 3~4 |
| • **Contents** | Product case 1 / Installation kit 1 |
| | / Auxiliary equipment 1 |

BMP3 A,F,V Decoy

### Aerospace Decoy
: M2000  F16 ·············

| | |
|---|---|
| • **Purpose** | To deceive enemy |
| • **Color** | Military Standard Camouflage Color |
| • **Size** | M2000 Actual size within ±5% Tolerance |
| • **Way to Operate** | Blower(need continuous electric power supply) |
| • **Material** | 1 Layer |
| | – Tensile Strength : Higher than 600N (ISO 13934-2) |
| | – Tear Strength : Higher than 35N (ISO 13937-2) |
| | – Weather Fastness : Higher than Level 3~4 |
| • **Contents** | Product case 1 / Installation kit 1 |
| | / Auxiliary equipment 1 |

M2000 Aerospace Decoy

### Missile Decoy
: Patriot Missile  THAAD ·············

| | |
|---|---|
| • **Purpose** | To deceive enemy |
| • **Color** | Military Standard Camouflage Color |
| • **Size** | Patriot Missile Actual size within ±5% Tolerance |
| • **Way to Operate** | Blower(need continuous electric power supply) |
| • **Material** | 1 Layer |
| | – Tensile Strength : Higher than 600N (ISO 13934-2) |
| | – Tear Strength : Higher than 35N (ISO 13937-2) |
| | – Weather Fastness : Higher than Level 3~4 |
| • **Contents** | Product case 1 / Installation kit 1 |
| | / Auxiliary equipment 1 |

Patriot Missile Decoy

---

## Deception of Shape

### K1A1 Decoy

#### Spec

| | |
|---|---|
| **Purpose** | To deceive enemy |
| **Color** | Military Standard Camouflage Color |
| **Size** | Actual size within ±5% Tolerance |
| **Weight** | Below 100kg |
| **Way to Operate** | Blower(need continuous electric power supply) |
| **Material** | 1 Layer Polyester 300D(PU coating)+Painting with special paints |
| | – Tensile Strength: higher than 600N(ISO 13934-2) / Tear Strength: higher than 35N(ISO 13937-2) / Weather Fastness: higher than Level 3~4 (ISO 105-B04) |
| **Contents** | Product case 1 |
| | Installation kit(generator, high pressure air blower) 1 |
| | Auxiliary equipment(Fixed pin, rope, gun barrel support) |

#### Price

| | |
|---|---|
| **Price** | – |

#### Option

| Ability of Deception | Visible | Observe from long distance 1~4km (Within 4km with binoculars) : comparison actual model and decoy observation with eye and binoculars |
|---|---|---|
| | Infrared Rays | Detection with night vision device(0.7~1.2μm) : Excluded range, shape Detection with thermal observation device(3~12μm) : Excluded range, shape |
| | Radar | Detection radar of 8~12GHz and RCS measurement |
| **Operation Environment** | | Temperature: –32 ~ +43℃ / Humidity: 5~95% |

#### Features

| **Features** | Blower—Keep blowing air with blower |
|---|---|
| | Possible to detect radar RCS and Infrared Rays (night vision device, thermal observation device) partly |
| | Possible to produce any type of weapon system such as combat plane, tank and missile. |

# 2 Level Fixed Type

DECOY SYSTEM Ⅰ

More elaborate than Level 1 having detection like an actual model not only for the eye, it covers night vision devices, thermal observation device. The decoy has a similar RCS and thermal observation signal.

## Convenience of Operation
1) Shielding: Structure of air in chamber. Keep in shape during 24 hours after blowing air.
2) Maintenance: Possible to repair and replace partly because of multiple chambers.
3) Install/Uninstall: Install within 15minutes with 4 people (Based on tracked vehicle decoy) Uninstall within 20minutes with 4 people

## Improvement of Detection
1) Infrared rays: Possible to control temperature with carbon fiber plane heater. Detect from night vision device and thermal observation device
2) Radar: Cover reflects electromagnetic waves using conductive cloth to detect radar.

## 2 Level Products

### Tracked Vehicle Decoy
: K1A2 K9 K21 BMP3
- **Purpose** To deceive enemy
- **Color** Military Standard Camouflage Color
- **Size** K9 Actual size within ±5% Tolerance
- **Weight** Below 200kg
- **Way to Operate** Shielding (after air charge keep shape during 24 hours)
- **Material** 2 Layer
  - cover : Polyester 300D+PU coating/Painting with special dyes
  - inner : Higher than Nylon 210D+TPU coating
    - Tensile Strength : Higher than 600N (ISO 13934~2)
    - Tear Strength : Higher than 35N (ISO 13937~2)
    - Weather Fastness : Higher than Level 3~4
- **Contents** Product case 2/ Installation kit 1/ Auxiliary equipment 1/ Repair kit 1

K9 A.F.V Decoy

### Aerospace Decoy
: M2000 F16
- **Purpose** To deceive enemy
- **Color** Military Standard Camouflage Color
- **Size** F16 Actual size within ±5% Tolerance
- **Way to Operate** Hybrid Combined blower and shielding)
- **Material** 2 Layer
  - cover : Polyester 300D+PU coating/Painting with special dyes
  - inner : Higher than Nylon 210D+TPU coating
    - Tensile Strength : Higher than 600N (ISO 13934~2)
    - Tear Strength : Higher than 35N (ISO 13937~2)
    - Weather Fastness : Higher than Level 3~4
- **Contents** Product case 2/ Installation kit 1/ Auxiliary equipment 1/ Repair kit 1

F16 Aerospace Decoy

---

DECOY SYSTEM Ⅰ  Level 1  Level 2  Level 3

## Deception of Optic System

### K1A2 Decoy

#### Spec

| | |
|---|---|
| **Purpose** | To deceive enemy |
| **Color** | Military Standard Camouflage Color |
| **Size** | Actual size within ±5% Tolerance |
| **Weight** | Below 200kg |
| **Way to Operate** | Shielding(after air charge, keep shape during 24 hours) |
| **Material** | 2 Layer<br>- cover : Polyester 300D + PU coating/Painting with special dyes<br>- inner : Higher than Nylon 210D + TPU coating<br>• Tensile Strength: higher than 600N(ISO 13934~2) / Tear Strength: higher than 35N(ISO 13937~2) / Weather Fastness: higher than 3~4 level (ISO 105~B04) |
| **Contents** | Product case 2 (Main and collateral case) |
| | Installation kit (generator, air compressor, high pressure air blower, handi-blower) |
| | Auxiliary equipment (holding pack, rope, gun barrel support) |
| | Repair kit (Spare cover, handi heater, TPU sealing machine) |

#### Option

| | | |
|---|---|---|
| **Stability** | | Ready for heavy wind, and rain<br>- Heavy wind : Exposed in maximum wind speed 10.7m/s which is wind level 5<br>- Heavy rain : Exposed in artificial rain over than 60mm during 30minutes (Heavy rain warning)<br>- Heavy snow : put on decoy same weight with 5cm snow during 24 hours (Heavy snowfall watch) |
| **Ability of Deception** | Visible | Observe from long distance 1~4km (Within 4km with binoculars)<br>: comparison actual model and decoy observation with eye and binoculars |
| | Infrared Rays | Detection with night vision device(0.7~1.2㎛) : Excluded range, shape<br>Detection with thermal observation device(3~12㎛) : Excluded range, shape |
| | Radar | Detection radar of 8~12GHz and RCS measurement |
| **Operation Environment** | | Temperature: -32 ~ +43℃ / Humidity: 5~95% |

#### Features

| | |
|---|---|
| **Features** | 2Layer: Separated structure cover and chamber (can change cover) |
| | Can be repair partial repair because of independence chamber (Included repair kit) |
| | Product case is a type of hard case for convenience of loading and transportation. |
| | The rest of the product kit is packed in hard case with IP67 waterproof certification. |
| **Price** | - |

### Contents of Product
Product package is considered easy loading and transportation. Included Installation kit, Spare kit, Repair kit.

Product case  Installation kit  Auxiliary equipment  Repair kit

### In Bad Weather
Using holding pack for bad weather.
Tested in heavy rain, heavy snowfall, Strong wind with qualified testing

06 「Ghost World」 Inflatable Decoy System     「Ghost World」 Inflatable Decoy System 07

# 3 Level Movable

DECOY SYSTEM I

Level 3 decoy is movable. Only one person controls multiple decoy using a wireless control system. The decoy in the container box can move to the right space quickly. After installing it completely, it can be moved in a short distance.

The decoy which contains extra equipment to install can transform automatically with a chamber frame. The decoy transforms step by step with blowing air in the chamber. After these steps, the decoy got perfect shape.

## 3 Level Products
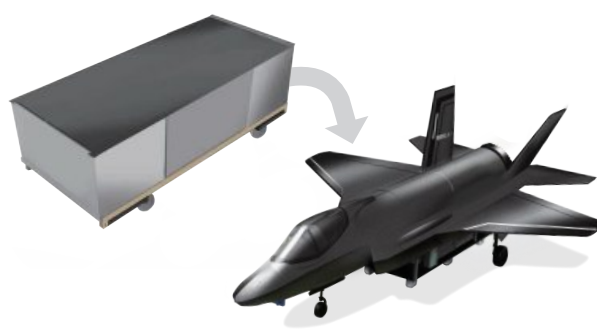
### Tracked Vehicle Decoy
: K1A2  K9  K21  BMP3 ⋯⋯⋯⋯

| | |
|---|---|
| • **Purpose** | To deceive enemy |
| • **Color** | Military Standard Camouflage Color |
| • **Size** | K1A2 Actual size within ±5% Tolerance |
| • **Way to Operate** | Hybrid(Combined blower and shielding) |
| • **Material** | 2 Layer |

  – cover : Polyester 300D+PU coating
           /Painting with special dyes
  – inner : Higher than Nylon 210D+TPU coating
    ‣ Tensile Strength : Higher than 600N (ISO 13934~2)
    ‣ Tear Strength : Higher than 35N (ISO 13937~2)
    ‣ Weather Fastness : Higher than Level 3~4

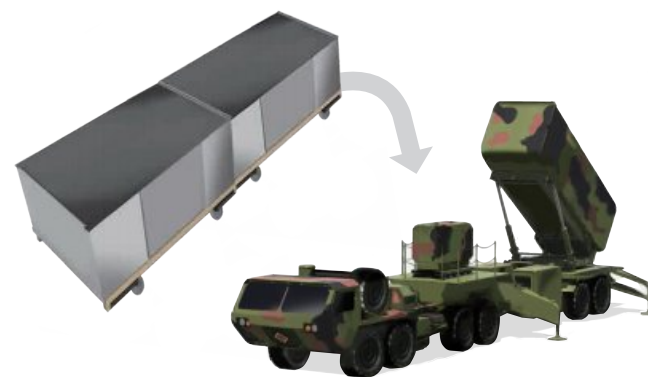### Aerospace Decoy
: M2000  F16  F35 ⋯⋯⋯⋯

| | |
|---|---|
| • **Purpose** | To deceive enemy |
| • **Color** | Military Standard Camouflage Color |
| • **Size** | F30 Actual size within ±5% Tolerance |
| • **Way to Operate** | Hybrid(Combined blower and shielding) |
| • **Material** | 2 Layer |

  – cover : Polyester 300D+PU coating
           /Painting with special dyes
  – inner : Higher than Nylon 210D+TPU coating
    ‣ Tensile Strength : Higher than 600N (ISO 13934~2)
    ‣ Tear Strength : Higher than 35N (ISO 13937~2)
    ‣ Weather Fastness : Higher than Level 3~4
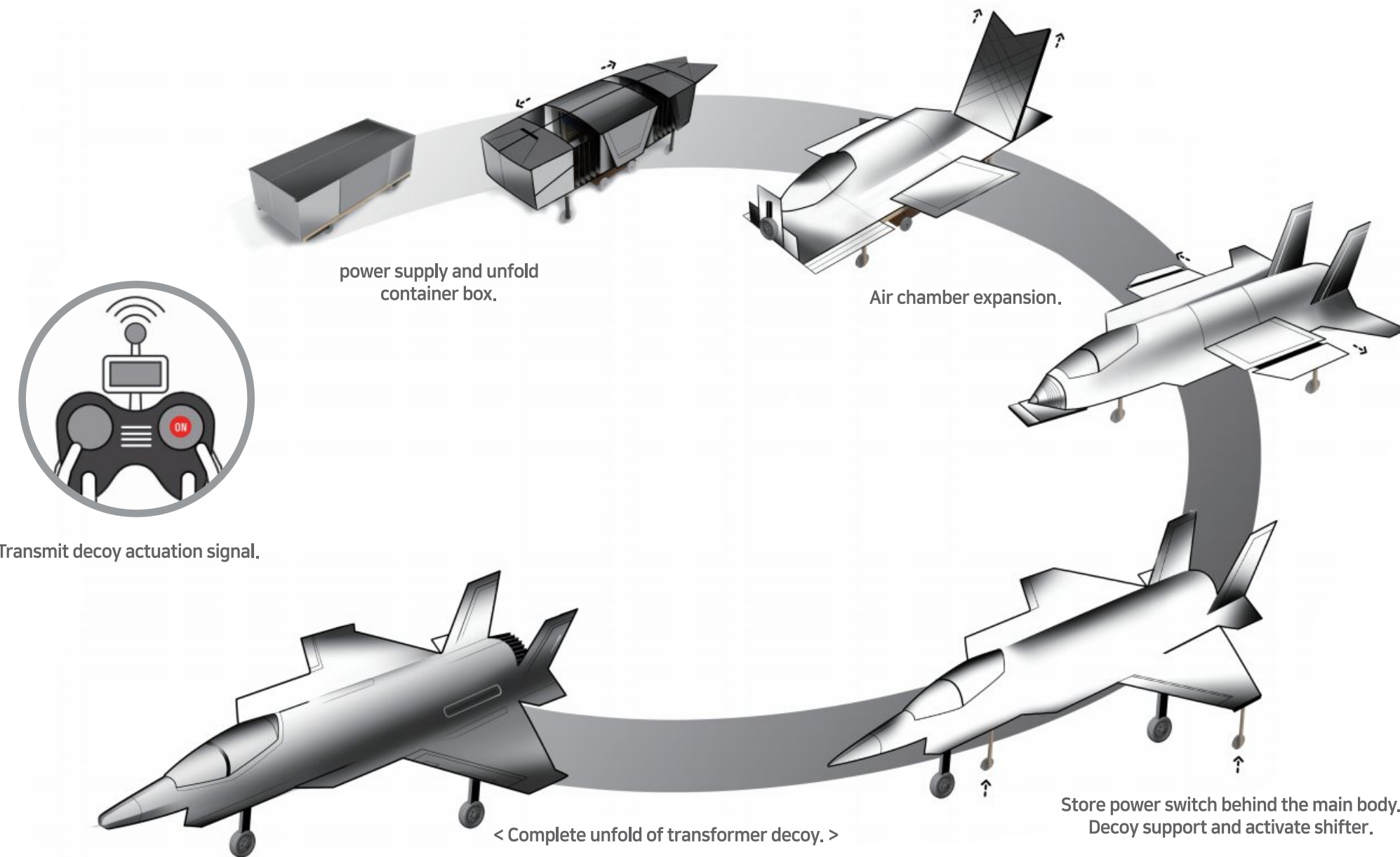
### Missile Decoy
: Patriot Missile  THAAD ⋯⋯⋯⋯

| | |
|---|---|
| • **Purpose** | To deceive enemy |
| • **Color** | Military Standard Camouflage Color |
| • **Size** | Patriot Missile Actual size within ±5% Tolerance |
| • **Way to Operate** | Hybrid(Combined blower and shielding) |
| • **Material** | 2 Layer |

  – cover : Polyester 300D+PU coating
           /Painting with special dyes
  – inner : Higher than Nylon 210D+TPU coating
    ‣ Tensile Strength : Higher than 600N (ISO 13934~2)
    ‣ Tear Strength : Higher than 35N (ISO 13937~2)
    ‣ Weather Fastness : Higher than Level 3~4

## Transformer Decoy

power supply and unfold container box.

Air chamber expansion.

Transmit decoy actuation signal.

Store power switch behind the main body.
Decoy support and activate shifter.

< Complete unfold of transformer decoy. >

# Integrated Logistic Support (ILS)

To guarantee efficiency and economic logistic support, we have logistic support ability related to the decoy system.

### ○ Supply Support

Provide built-in product, expendables for efficiency decoy operation.

### ○ Technique Manual

Operation possibility is our top priority.
We accomplish education cooperation with military when we do initial supply

### ○ Package·Instruction·Store and Transportation

We follow the national defense standard for pack-ages. We consider simplicity of use. We reflect ergonomic design such as handle for transporta-tion. We retain the convenience of users.

# R&D

Through non weapon system development projects, we hope to contribute decoy system qualification for the Korean army. Through that, we are going to grow an advanced defense company.

We are doing our best to develop decoy system which can respond to war in the future with high technology. Also, we suggest the future of the decoy system and develop new key technology of decoy. We are going to provide solutions for decoy systems all over the world.

Possess planning and design specialist.

Possess measuring equipment and facility to improve deception ability.

Possess 1,320m² research and development center.

# HISTORY

**2013 ~ 2014**
Naval Decoy with detection of radar
Public and military Technology cooperation and joint development

Participated 2014
Korea Defense Technology Festival

**2014 ~ 2017**
[Level] Started K1A2 Decoy Research and Development

Participated 2017 ADEX [Level2] Exhibition K1A2 Decoy

**2018**
Established R&D center for Decoy System

Participated 2018 Defense Industry Fair
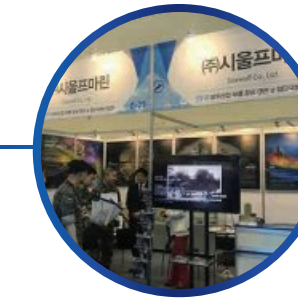Ghost Army : Decoy System Exhibition promotion booth

[Level2] Obtained order of K1A2 Decoy research and development

**2019 ~ 2021**
Participated 2019 ADEX [Level2] Exhibition K9 Decoy

[Level2] K1A2 Decoy Completed research and development
(Working on test evaluation)

[Level3] Started F-35 Decoy Research and Development

Participated 2021 ADEX [Level2] Exhibition K1A2 Decoy

## Contact US

### Ac Address

R&D CENTER
99-25 Jang Yuro in Gimhae,
Gyeongsangnam-do
(50971)

HEADQUARTERS
64, Sasang-ro 319beon-gil,
Sasang-gu, Busan
(46948)

### Tel

R&D CENTER
+82 55 322 2581

HEADQUARTERS
+82 51 503 2581

### E-mail

seawolf502@hanmail.net
seawolf.kimhae@gmail.com