

# SmartSee

(Video Transmission Solution)



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**WooriByul**



## Smart Surveillance Usage Scenario

01

### Expanded Surveillance Range

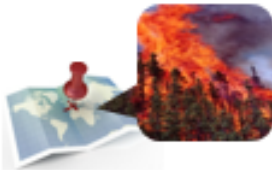


It is impossible to determine the exact site conditions when there is no CCTV installed or if it's a dead angle

- ✓ Infinite extension of the surveillance range with the mobile terminal
- ✓ Mobile tracking surveillance using wireless network

02

### Grasp the Exact Situation



Site situation awareness through phone reports or TV video >  
Difficulty in determining the exact site situation

- ✓ Real-time video transmission via on-site people's smartphones
- ✓ View of video/audio of any desired part using real-time communication
- ✓ Identifying the exact site location using GPS

03

### Remote Command & Control



Difficulty in communication with decision-makers or experts when actions should be taken

- ✓ Share multiparty video between site + situation room + remote place workers
- ✓ Real-time remote supervision using video calls & voice messages

# No.1 Disaster Management Solution



Based on real-time bidirectional mobile video communication

## Next Generation SMART Disaster Safety Control Solution

### Fast situation diffusion

#### Fast situation diffusion by various means

- 1:1 immediate **video call function** using an organization chart & multiparty video share
- Easy and fast message forwarding using **voice message transmission** function
- **Message transmission via administrator's web**

### Real-time on-site supervision & support

#### Remote supervision control & technical support

- **Bidirectional video/voice calls** between mobile site & situation room
- Transmission of clear on-site video of **CCTV dead angle & close-up filming**
- **Remote site supervision using real-time conference call** to decision makers outside the situation room
- Check in real time **exact site location info**

### Recording & Reporting

#### Real-time recording & field report

- **Real-time recording & record management** provides evidence & prevents recurrence of incidents
- **Real-time reporting** on facilities inspection & maintenance
- **Printing & server storage** for inner reports

#### Disaster site



### Smartsee DMS

Live HD Video



Share location info



Simultaneous multiparty connection



Report upload



Voice/Text Message forwarding



Recording /History management



#### Integrated situation room

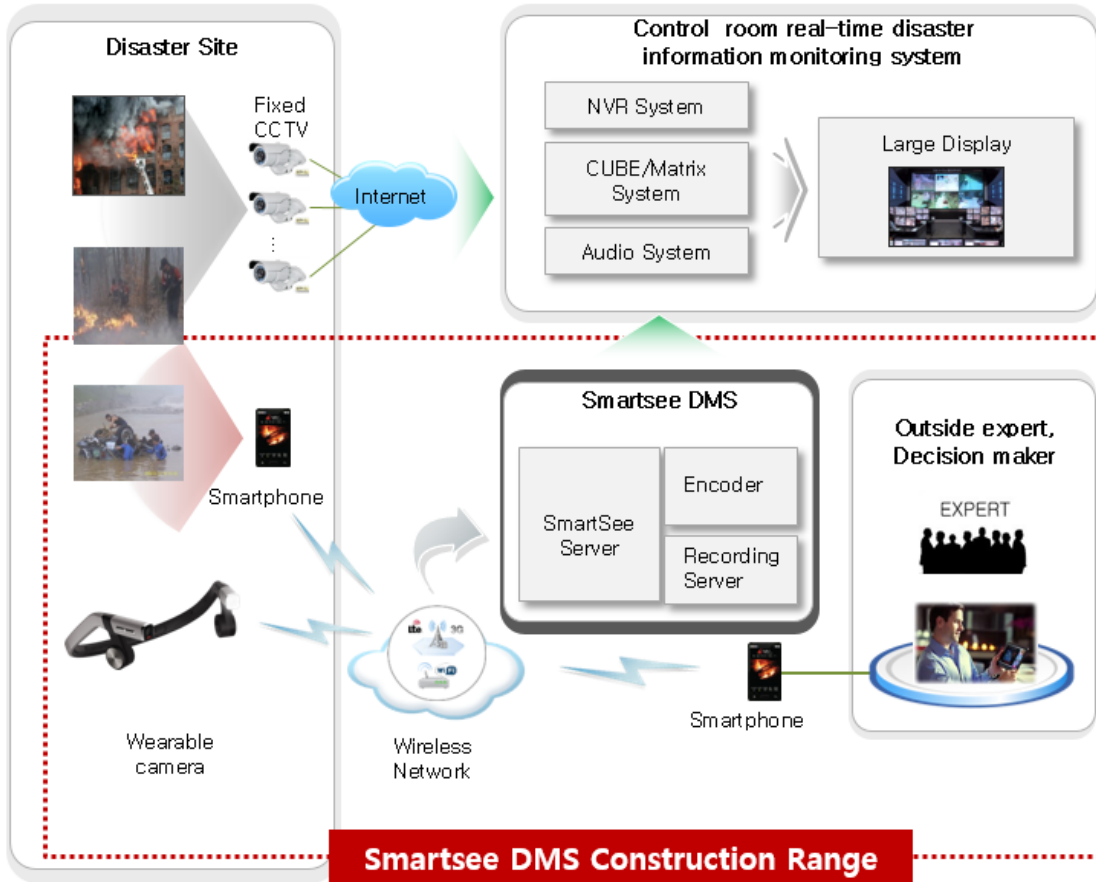


#### Relevant agency/ Outside expert





## Solution Concept



### Existing system & integrated configuration

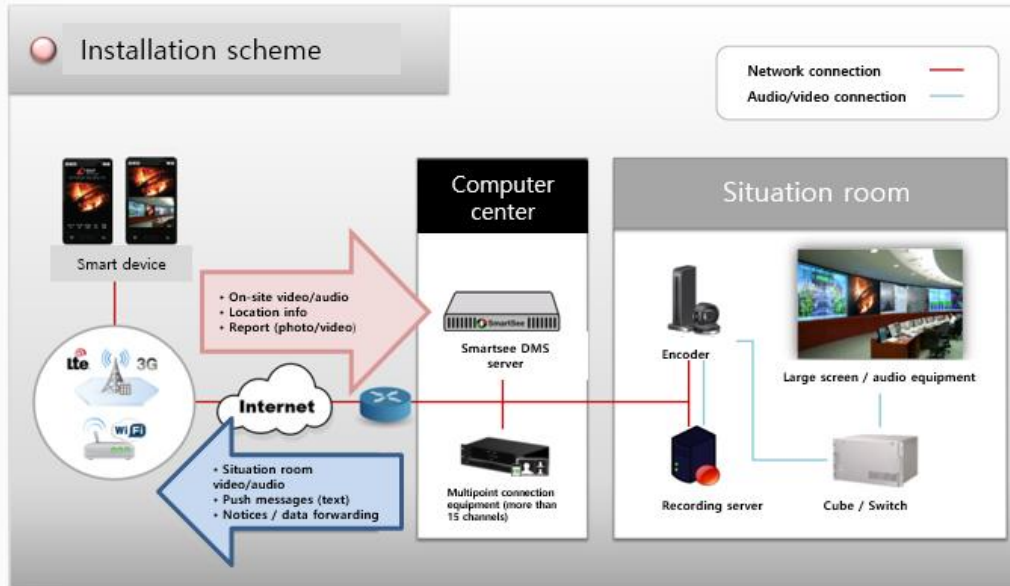
- Upgrade of existing system surveillance scenario by existing CCTV surveillance system & existing AV system or other system integration

### Future expandability consideration

- Easy connection to video conferencing system
- Easy capacity expansion by adding additional license or related equipment



## Solution Installation Scheme



Category	Description
Smartsee DMS Server	<ul style="list-style-type: none"> <li>Mobile device user authentication</li> <li>Video / sound transfer processing role</li> <li>Provides user interface</li> </ul>
Smartsee DMS Client	<ul style="list-style-type: none"> <li>App, vehicle DVR system installed to a smartphone or PAD</li> <li>Provides two-way phone calls with maximum HD resolution</li> </ul>
Encoder	<ul style="list-style-type: none"> <li>Output of high quality on-site video to a large screen in the situation room</li> </ul>
Recording Server	<ul style="list-style-type: none"> <li>Provides live video / audio recording function</li> </ul>

### [Field video display board]

- ✓ Output of the encoder image



[Example of situation room display configuration]

### [Dashboard display]

- ✓ Output of the administrator's webpage



## Main Features & Functions

### Transmission & storage of live HD on-site video

- ✓ **Transmission of live video / audio to the situation room + two-way calls**
- ✓ Transmission of on-site video with **max 720p HD** quality
- ✓ **Simultaneous conference connection** & split-screen
- ✓ Transmission of location information
- ✓ Storage of multichannel videos to SSD of a vehicle DVR

### Mobile report

- ✓ Creating & uploading reports in a mobile phone
- ✓ **Attaching photo & video**
- ✓ Saving the writer's **location info**
- ✓ **Customizing** to fit the style of a checklist etc.



### Situation diffusion function

- ✓ **Video call** function using organization chart
- ✓ Transmission of **voice messages** (walkie-talkie function)
- ✓ Transmission of text messages
- ✓ **Group transmission** function

### Server recording & record management

- ✓ **Real-time high-quality recording** of encoder video
- ✓ **Automatic & manual recordings**
- ✓ Management of the recording list & participants' location info

### Security & extensibility

- ✓ 3<sup>rd</sup> Party mobile VPN(SSL, IPSec) interlocking
- ✓ MDM solution interlocking
- ✓ Standard SIP support videoconference interlocking



## Case Studies of Each Sector

It is actively used as an application in various sectors such as general businesses, public institutions & local governments.

### Seoul Central District Prosecutor's Office



#### Setting an advanced investigation

- Used as remote investigation conduction application
- Used during confiscation searches
- Used during undercover work
- High quality video makes it possible to detect faces & documents

### Seoul/Gwangju/Daegu City Halls



#### Setting a disaster controlling room

- Used as an application for taking measures during floods, snow removal & other disasters
- Used for remote site supervision & mobile video conferencing
- Private terminal operations (100 units in Seoul, 40 units in Daegu)

### Korea Coast Guard



#### Setting an Executive director room/ Situation room/ Conference room

- Used for site reports
- Used for video conferencing
- Used for remote supervision when some event occurs
- Site video recording & broadcasting
- 90 exclusive terminals used

### LG Chemicals



#### Setting a health safety team at Cheongju plant

- Overcome dead radio communication zones
- Used as site video support
- Used for site inspections & reporting tasks
- Can mingle together smartphones & smart PADs

# SmartSee Wearable Camera

(Video Transmission Device)



# Solution Structure



## On-site

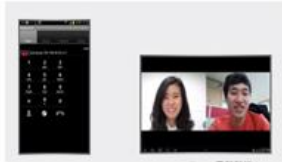
Wearable camera



Smartphone



Client SW



## Remote place

Smartsee  
DMS



### Situation room



Display of on-site video on a large screen in the situation room and making calls

### Video conference codec

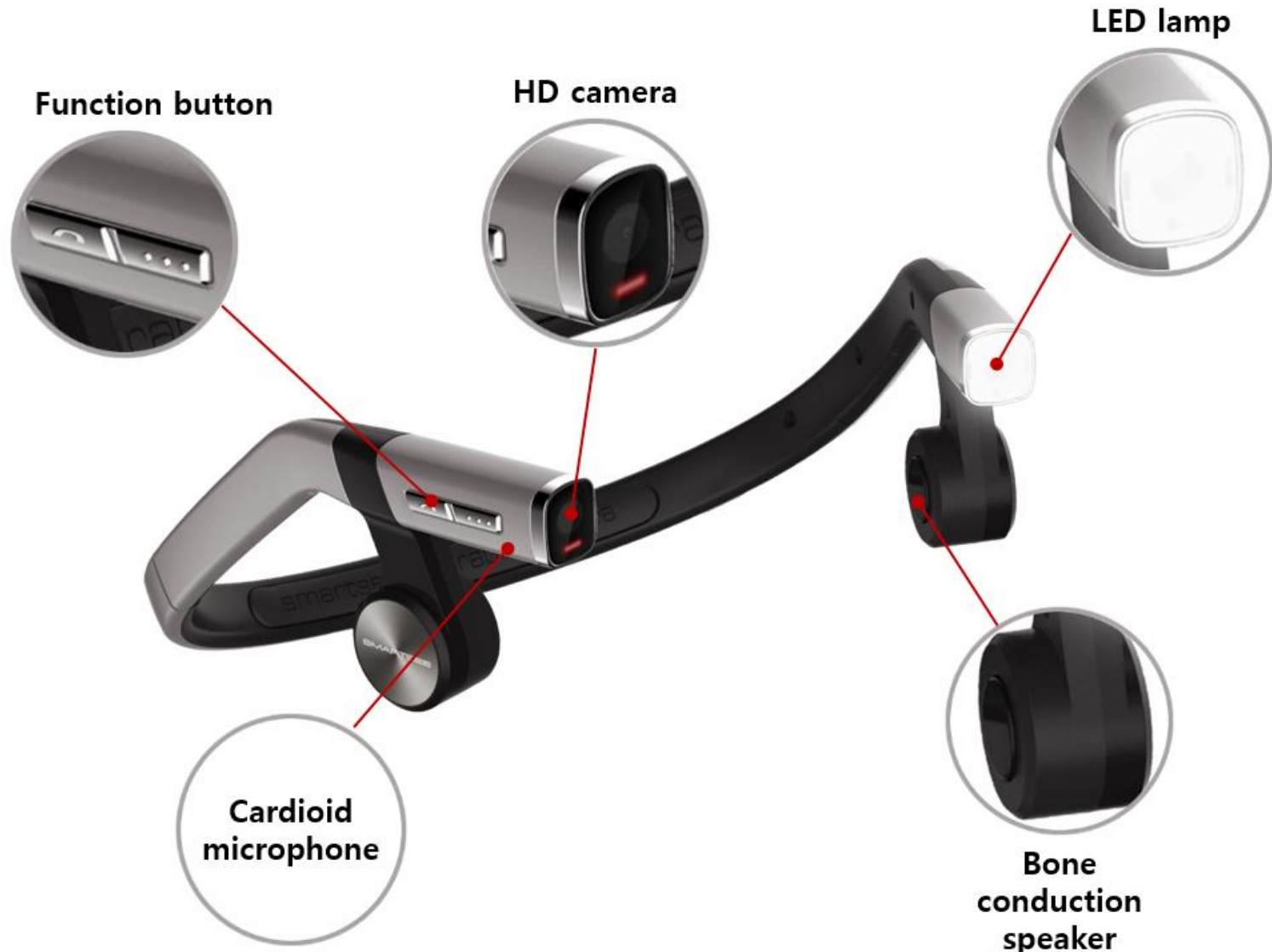


Cisco, Polycom, Life Size etc.

### Outside user



Smartphone & PAD, PC



# Main Functions (1)



## Photo, video recording



Takes photos, records videos & saves them to a mobile phone

## HD video streaming



Video Streaming

Unidirectional HD 720P video streaming

## HD 720P video calls

HD 720p

Bidirectional real-time HD video / voice calls

## Regular voice calls



Hand free voice calls

## Works with different video conferencing equipment



## Emergency situation use

**URGENT**

**EMERGENCY**

Operate OneTouch button during emergency situations for taking photos, video, situation room reporting

# Main Functions (2)



## OneTouch Interface



All the functions are operated by OneTouch: photo, video, connection to the situation room, LED on/off, receiving & making calls

## Voice Guide



Voice guide for all operations

## Voice Recognition



Use voice recognition function to make phone calls, listen to music etc.

## Outside Activities Optimization



Sensing of peripheral sounds during a call by using the bone conduction speaker

## LED Lamp



Use LED lamp in dark places

## Use at All Times



Use for regular phone calls & listening to music

# Main Functions (3)



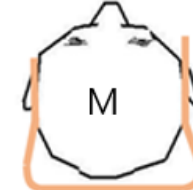
## Suits Various Types of Helmets

- Can be worn inside various types of helmets such as military, industrial site, fire fighting, police etc.
- People wearing glasses can also easily use it



## Matching the line of the eyes

- Double refraction structure is optimized for different head sizes, neckband headset type
- Camera matches the line of the eyes



## No Need for Separate Power or Network

- No need for a separate battery or a charger as wearable camera charges from the smartphone
- It uses smartphone LTE, WIFI, 3G network



# Specification of Wearable System



## Camera

- 5M pixel camera
- 1/4" color 2M CMOS sensor
- UXGA, SVGA, CIF, QICF,720P 30fps

## Microphone

- Cardioid microphone
- Frequency 60 to 15,000 Hz
- Sensitivity 1.8 mV
- Impedance 150 ohms

## Speaker

- Bone conduction speaker

## LED light

- 250 lumens

## One touch operation

- Take pictures, record videos, video calling, receive regular phone calls, volume control

## Signaling

- SIP RFC 3261, RFC 2833
- RTP/RTCP

## Media processing

- Audio : G711, G722, AAC
- Video : H263, H264 high profile
- Resolution : qCIF, CIF, QVGA, VGA, WVGA, HD720P

## Picture

- VGA, HD 720P
- Picture file PNG

## Video

- CIF, VGA, HD720P
- Recording file mp4

## Voice commands

- Making & receiving phone calls, listening to music



## Evidence materials



- Ensures evidence materials during argument with a complainant
- Provides objective evidence material about on-site emergencies

## Mobile CCTV



- Live on-site video relay
- Real-time monitoring in situation room, PC, Android, iPhone etc.

## Remote real-time support



- Hand free real-time remote support
- Remote technical support
- Remote medical support

## Status report, command & control



- Live on-site video report
- Remote command & control of site, situation room & related departments by using conference call feature

# Potential Use of SmartSee System



Remote medical care



Police



Fire fighting



Remote technical support



Personal black box



Security convoy





# Smartsee wearable camera

**“Wearable camera is used in public and industrial spheres. It makes it possible to transmit in real time records about incidents and accidents and on-site situation at Golden Time, and at the same time to promptly control and remotely support the situation through collaboration.”**



# Thank you.

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