



솔리톤 시스템스

Soliton Systems K.K



OUR MISSION

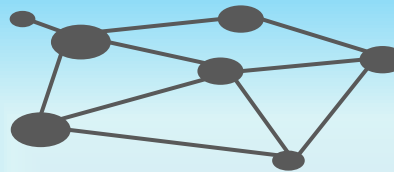
Quality, Reliability, Satisfaction

// IT Security // Broadcast // Public Safety // Special Projects //



SOLITON SYSTEMS K.K
SHINJUKU 본사

Shinjyuku2-4-3, Shinjuku-ku,
TOKYO #160-0022 JAPAN



일본

YAMAGATA, OSAKA, NAGOYA,
SENDAI, SAPPORO, FUKUOKA

SOLITON SYSTEMS EMEA

3 Gustav Mahlerplein 2 1082 MA
Amsterdam NETHERLANDS

SOLITON SYSTEMS APAC

High St Centre, 1 North Bridge Rd
#08-08, Singapore 179094

SOLITON SYSTEMS, Inc 미국

2642 North First Street Suite 213
San Jose, CA.95134 USA

SOLITON NETWORK

SYSTEMS Co., Ltd 중국
Suite A-B, 7F, Junli Caifu Building
5199 Gonghe New Road,
Shanghai, China 200435



500+
글로벌 조직

1,700억
2017년 총매출

2017
TSE(도쿄증권거래소)
1st Class 상장



Smart-telecaster Zao-S

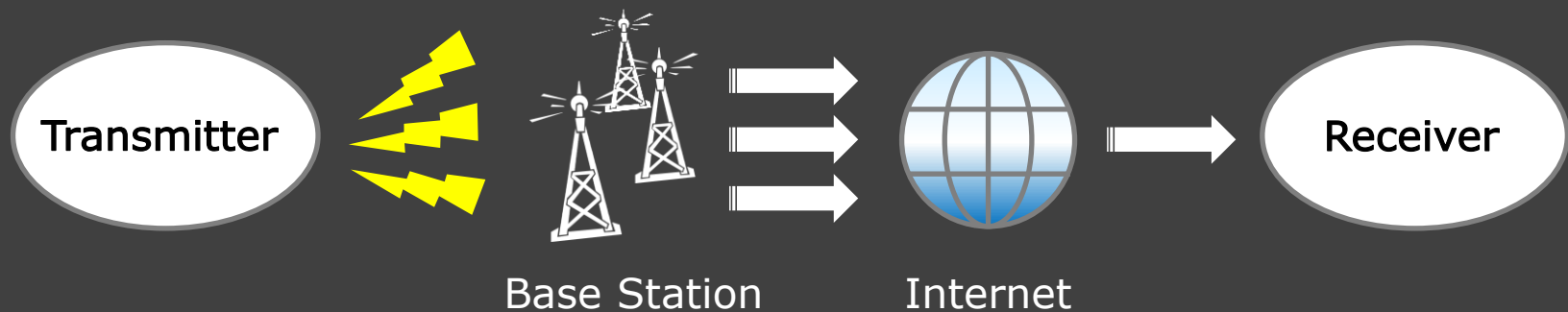
제품 및 기술소개

Mobile Broadcast Division
Soliton Systems K.K.



(유)무선 네트워크 환경에서 고품질 비디오 영상을 전송하는 시스템

Transmission of **video** / **audio** using mobile phone line





Transmitter(송신부)

네트워크 본딩(bonding)을 지원하는
하드웨어 인코더 및 Android 앱



Smart-telecaster Zao



Smart-telecaster Zao-S



Smart-telecaster Zao Android App

6 Lines Multi-link

3 Lines Multi-link

2 Lines Wi-Fi or 4G

Receiver(수신부)

옵션(소프트웨어)

- 1) Zao Media Gateway
- 2) HD View(1채널, 4채널)

On Prem or Cloud



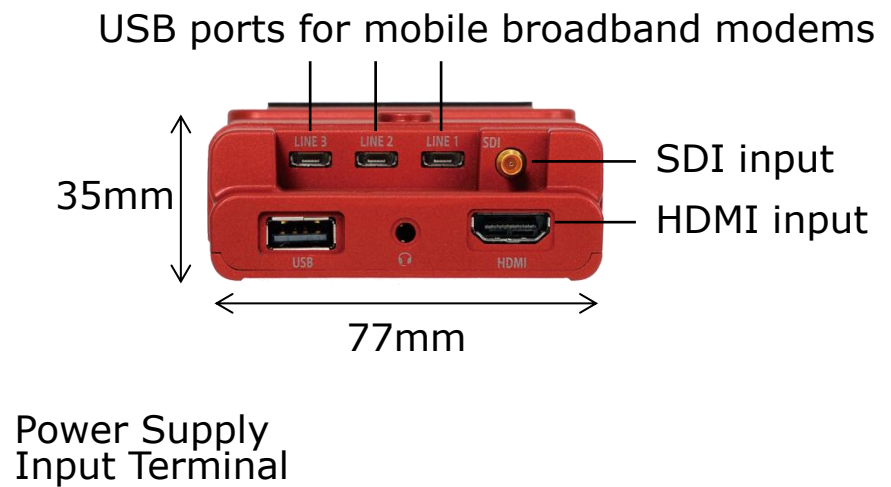
HDView



Front

Side

Top





세계 최소형
초경량

HEVC H.265
모바일 인코더



Low Bitrate

High Quality Image



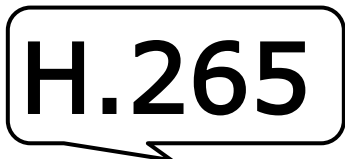
Easy to carry

Lightweight



Sports / Event

Live Relay / Streaming



HEVC H.265
하드웨어 모바일 인코더
(세계최초 개발 성공)



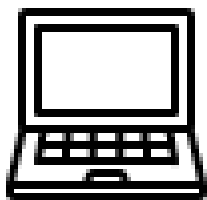
초소형, 초경량
350g



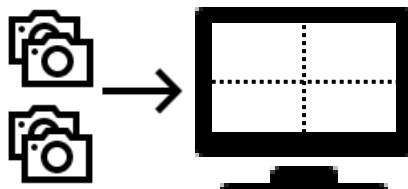
최대 3개의 네트워크
멀티링크(본딩)
3G/LTE/4G/Wi-Fi
LAN/BGAN



전력소모	18W
내장 Battery	1H
외장 Battery	3H



Zao-S bundles
1Ch Receiver Software
(무료)
IP Streaming (H.264)



최대 4Ch Receiver



웹스트리밍, VMS 와 연동
(자체 Media Gateway)



Base 코덱을 가장 효율적/효과적으로 무선네트워크에서 전송

Codec

Proprietary Protocol

H.265

×

RASCOW

Real-time Auto Speed Control On Radio Wave Model

= 가변적 모바일네트워크 환경에서도

고품질기반 안정된 실시간 영상 전송



가용의 네트워크 환경에 최적화(화질, 안정성)된
실시간 영상 전송



- ✓ Video Transmission over IP
- ✓ ZERO accumulated delay
- ✓ 실시간 Bit rate 및 Frame 조절
- ✓ 끊기지 않는 음성, 비디오 전송
- ✓ 탁월한 네트워크 문제 분석
- ✓ 네트워크 본딩(Bonding)
- ✓ Throughput 최대화
- ✓ 네트워크 플랫폼 기술력 어필



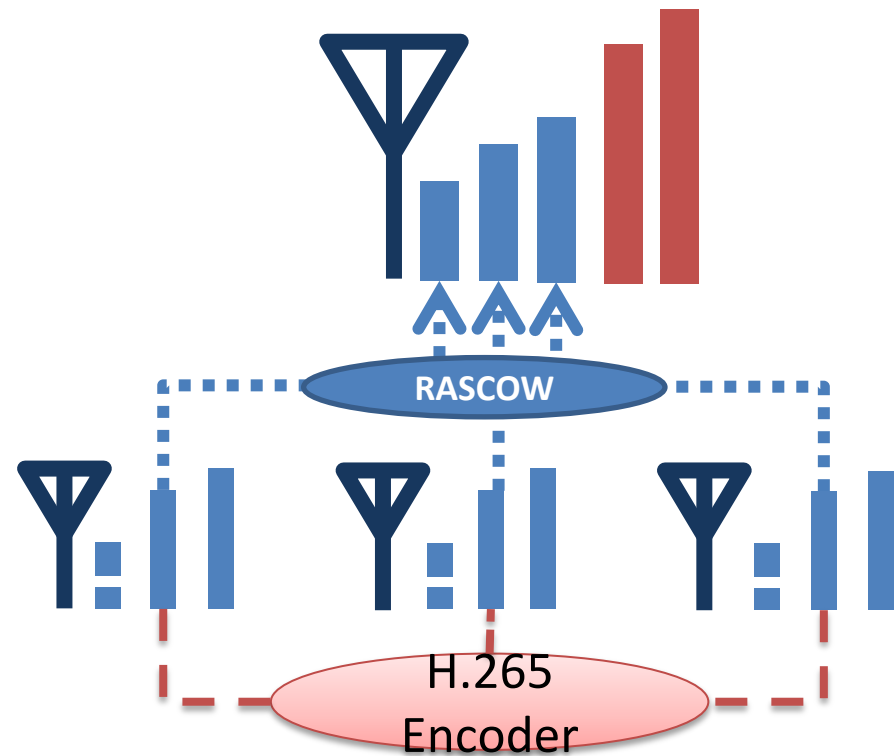
네트워크 Nature
자동 모니터링 분석



지능형
로드밸런싱



어댑티브
인코딩





(1) Connection Authentication(연결인증)

Passcode

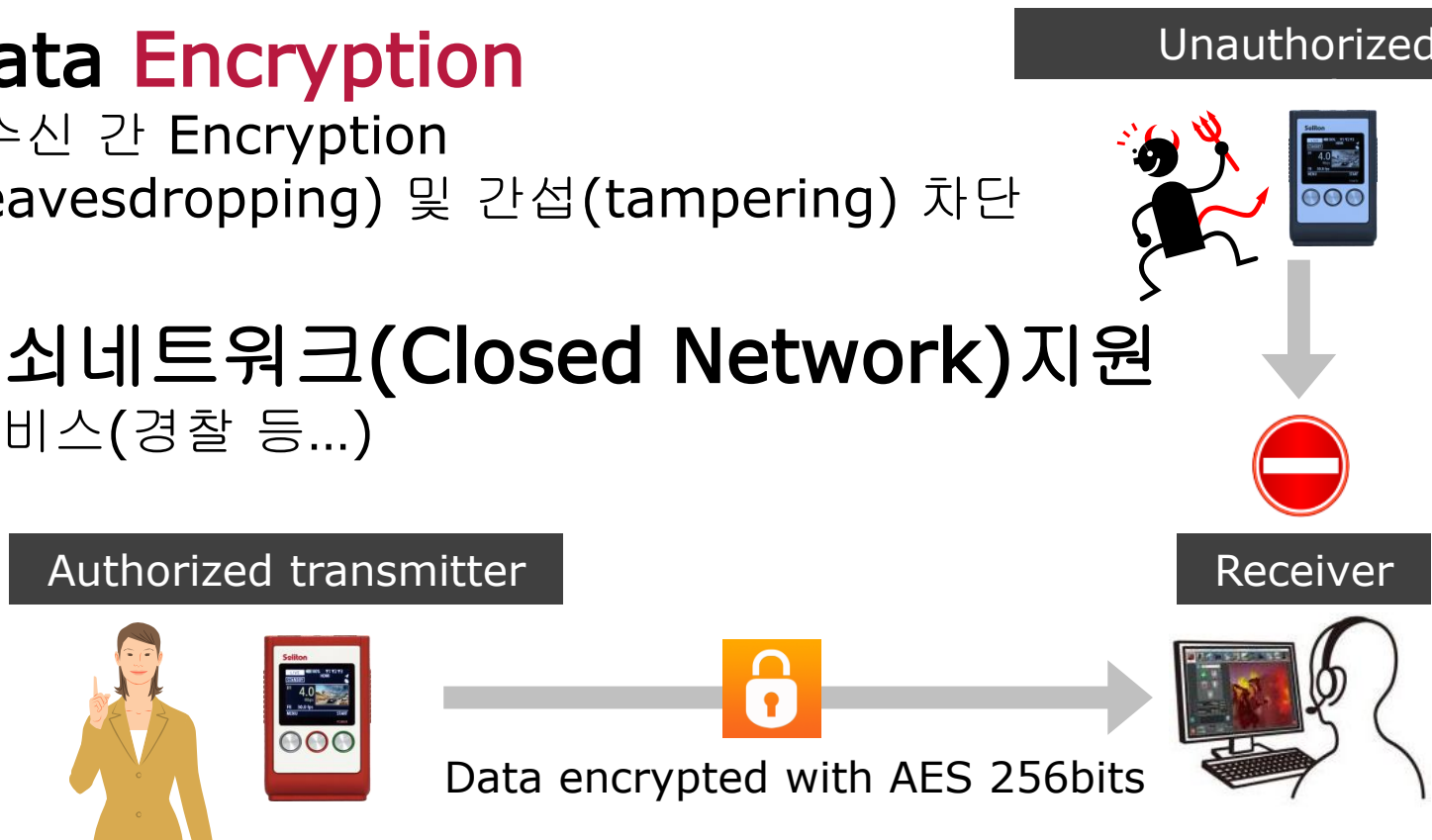
(2) Data Encryption

송신/수신 간 Encryption

도청(eavesdropping) 및 간섭(tampering) 차단

(3) 폐쇄네트워크(Closed Network)지원

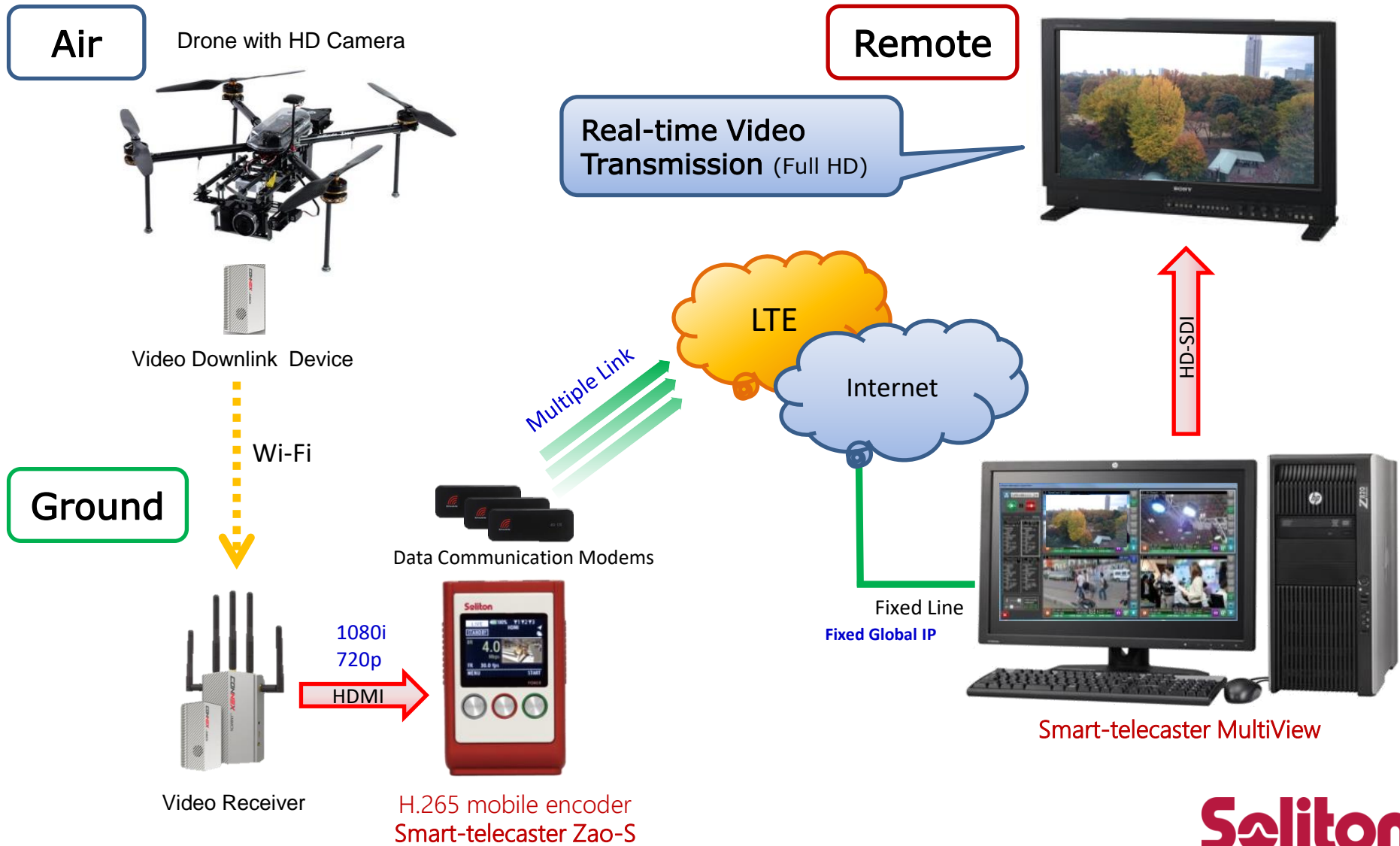
공공서비스(경찰 등...)





Use Case : Zao-S with Drone

12

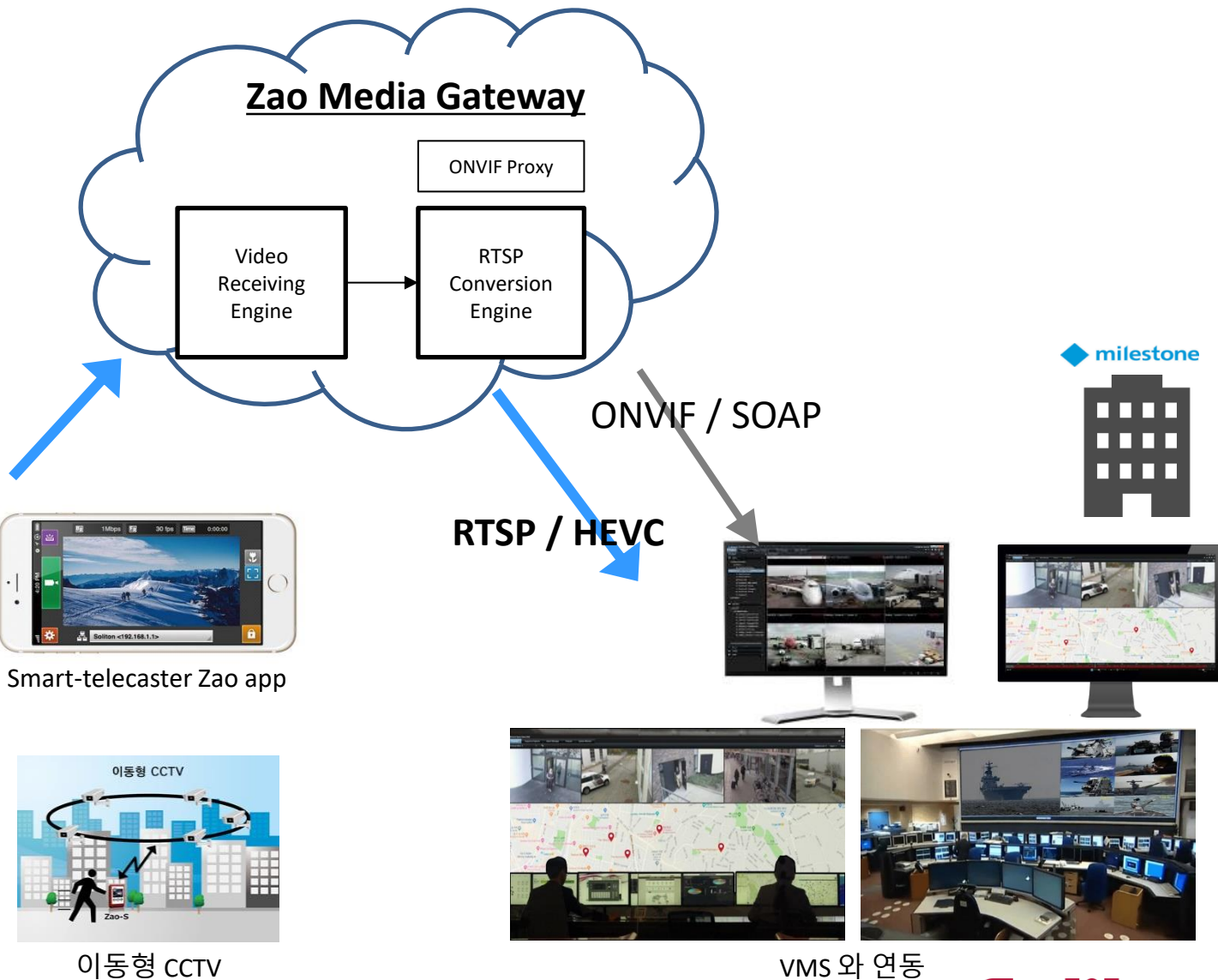


- 외부 생방송 송출 : 방송차량 장비 대체
- 일본 방송시장 80% 점유(일본내 생방송 및 해외현지 방송)
- 전세계 40여개 지역 Distribution





PUBLIC SAFETY



Airbus Tactilon Dabat

Smart-telecaster Zao app



공공서비스 외부 활동



이동형 CCTV



VMS 와 연동





Appendix



▪ 외장 Lithium-ION(리튬이온) Battery

Rated Capacity	5,700mAh
Dimension	84×34×135mm
Weight	450g

- DIN-BNC Cable 30cm
- USB Extension Cable x 3
- USB WiFi Receiver
- USB 100base LAN Converter
- AC/DC Adapter

* For Zao-S main unit and external battery charger





▪ Shoulder Bag



USB 모델 파우치

STC ZAO-S 장착

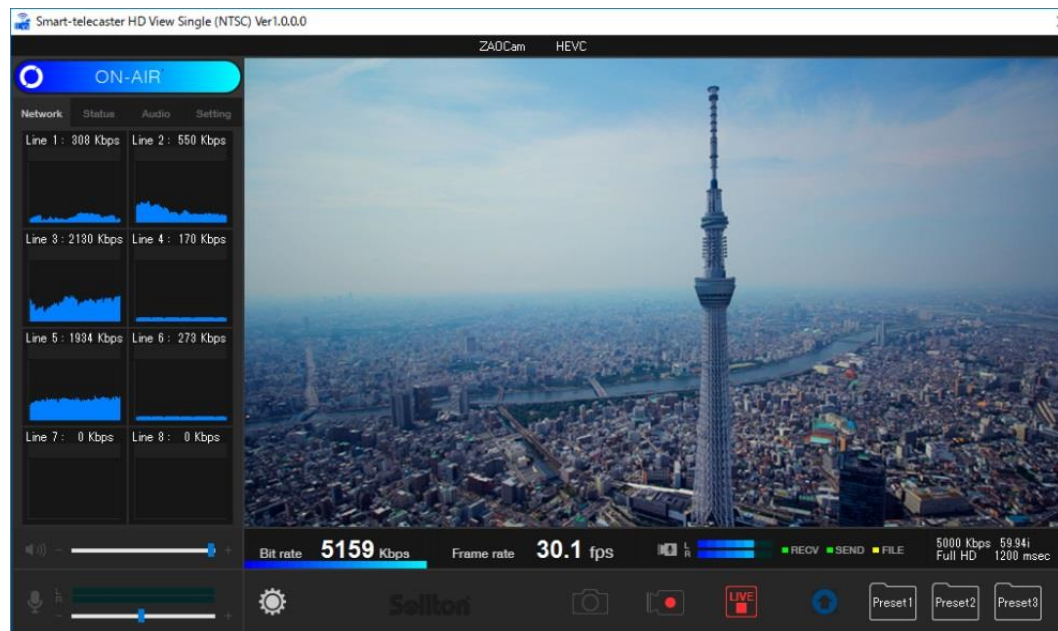
외장 배터리 파우치



- **1Ch Receiver Software License x 1**

솔리톤 웹사이트에서 인증 다운 설치

Software GUI image



※ Installed on Windows 10 PC.



Recommended SPEC

CPU: Core i7 2.4GHz+

RAM: 8GB+

OS: Windows10 Pro 64bit

GPU: NVIDIA GeForce/Quadro

** Required when using the IP streaming function.*



Recommended output device



Blackmagic UltraStudio Express

Blackmagic UltraStudio MiniMonitor

Blackmagic DeckLink Quad



STC **ML** (VP8)

Perpetual License
iPhone/iPad is not included.



STC **Zao-S** (H.265)

Zao-S body / Shoulder bag
USB cables x3
External battery x1
AC Adapter
Warranty for 1st year
* Support free from 2nd year
* Modem is not included



STC **Zao** (H.265)

Zao body / Carrying bag
USB cables x6
AC Adapter
V-Mount Adapter Plate
Warranty for 1st year
* Modem is not included.
* Support fee from 2nd year



STC **HDView** Software

STC **HDView Single** Software Free with Zao-S Purchase

<Recommended Hardware>

HP Z440 Workstation

OS: Windows 7/ Windows 10 Pro 64bit
CPU: Intel Xeon E5-1630v4(3.70GHz,4Core)
RAM: 32GB DDR4 SDRAM
HDD: 1TB HDD(SATA, 7,200rpm)

Blackmagic DeckLink Quad2

*When using IP streaming, Soliton has tested on
"HP Z620 with K2200" which is also recommended.

<Recommended Hardware>

DELL XPS15

OS: Windows 10 Pro 64bit
CPU: Intel Core i7-7700HQ
RAM: 8GB DDR4-2400MHz
ROM: 256GB PCIeSSD
GPU: NVIDIA GeForce GTX 1050 4GB GDDR5

Blackmagic UltraStudio MiniMonitor



Sample Configuration

22

Video Relay Apparatus
Carried out to the relay site



STC Zao

STC Zao-S

4 Channels
Simultaneous
Receiving



STC HDView



STC ML

(Transmitter)STC Zao	x1
(Transmitter)STC Zao-S	x1
(Transmitter)STC ML -10Lic	x1
(Receiver)HDView Software	x1
HP Z440 Workstation	x1
BMD Decklink Quad2	x1

Total




Setup&Installation
Lecture / 1Day



Product Lineup - TRANSMITTER

23

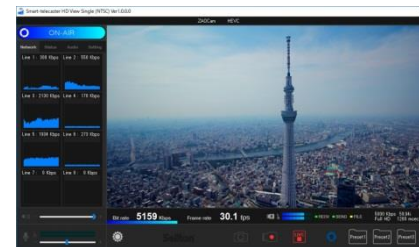


			
Name	STC ML for iOS	STC Zao-S	STC Zao
Video Codec	VP8	H.265(HEVC)	H.265(HEVC)
Max. Bittate	10Mbps	5Mbps	10Mbps
Format	960x540p15 640x360p29.97	1920x1080i59.94 1280x720p59.94 720x480i59.94 1920x1080i50 1280x720p50 720x576i50	1920x1080i59.94 1280x720p59.94 720x480i59.94 1920x1080i50 1280x720p50 720x576i50
Multilink	2	Mobile x3 + WiFi x1	Mobile x6 + Wired LAN x1
Audio Frequency	8 ~ 22KHz	8 ~ 48KHz	
Audio Codec	Vorbis		
Latency	480 ~ 30000msec		
Size	-	77x123x35mm	123x160x46mm
Weight	-	350g	900g
Power Consumption	-	18W	28W



Product Lineup - RECEIVER

24



Name	STC HDView	STC HDView Single
Output Device	BMD DeckLink Quad 2	BMD UltraStudio Express BMD UltraStudio Mini Monitor
Output	HD-SDI x4	HD-SDI x1 or HDMI x1
Transmitter	STC Zao STC Zao-S STC ML for iOS	
Channels	4	1



Video Input Interface		HD-SDI / HDMI *DIN-BNC conversion cable is included
Video Codec		H.265(HEVC) Main Profile
Video Format		1080i 59.94/50, 720p59.94/50, 525i/59.94, 625i/50
Audio	Input	SDI/HDMI embedded audio
	Codec	Vorbis
	Sampling	16bit 48KHz, 22KHz, 11KHz, 8KHz
	Channel	Stereo/Mono
	Output	3.5Φ mini jack, Analog Audio *Return audio output terminal from receiver
Connector Type for Mobile Phone Line		USB2.0 x 3 ports
Network	Network Line	3G, LTE, 4G, Wi-Fi, Private LTE, BGAN, Ethernet LAN
	Error Correction	ARQ, Packet Sort
	Protocol	UDP/IP (RASCOW)
	Encryption	AES 256bit
	Authentication	Pass Phrase (Max. 32 Characters)
	Multilink	Max. 3 Lines
Dimension		(W)77mm×(D) 35mm×(H)123mm
Power Consumption		18Wh
Weight		350g
Operating Temperature		0 ~ +40℃ *No condensation
Operating Humidity		20 ~ 80%RH *No condensation