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REPORT OF SMART CITY SHOWCASING

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8th September,2015

Report of Smart City Showcase

Our FIRST Responsibility is to our customers, We shall help them sustain and develop their business by providing superior products and services through " TSUNAGU"(connection) technologies.



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1) Wireless Broadband Leaky Coaxial Cable (WBLCX)



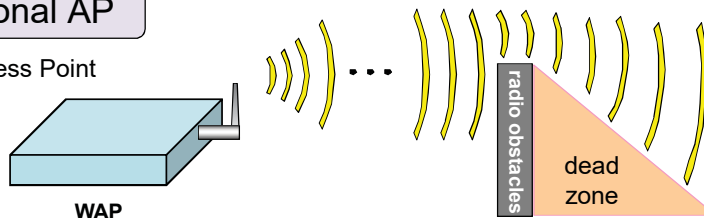
Outline of WBLCX

Main Feature

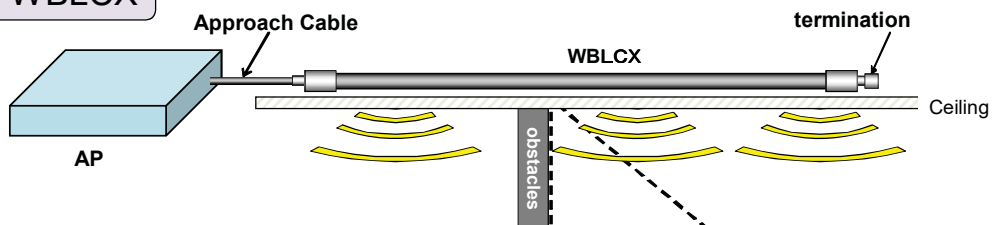
- WBLCX is an Antenna ensuring reliable wireless LAN along the route of cable
- an Antenna that can eliminate radio dead zone efficiently
- an Antenna that can output stabilized radio waves
- an Antenna that can withstand the harsh environments (-40°C to 75°C)
- an Antenna that is maintenance free and lifecycle is more than 20 years

Conventional AP

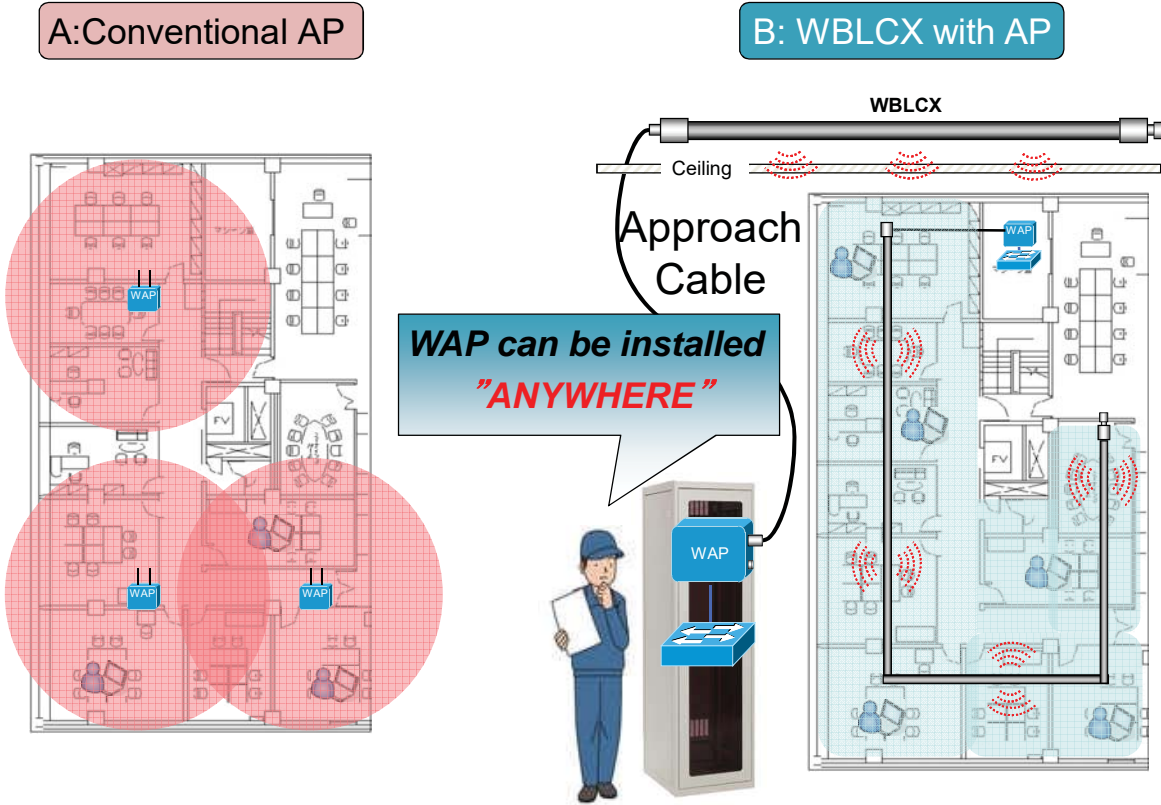
※AP: Access Point



WAP with WBLCX



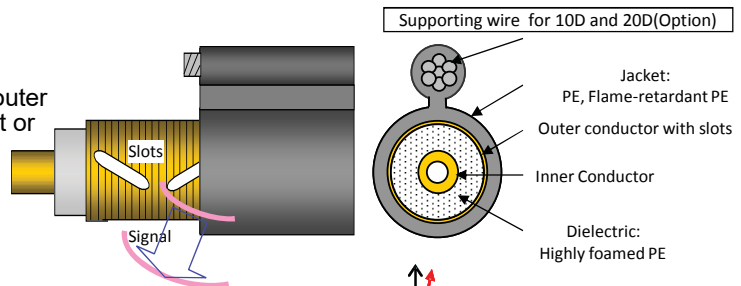
Simple Comparison Between Conventional AP and WBLCX



WBLCX - Wireless Broadband Leaky Coaxial Cable

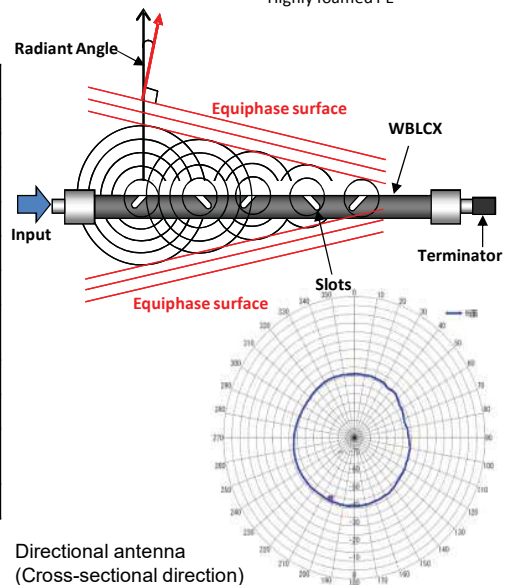
Construction

Leaky Coaxial cable (LCX) has slots in the outer conductor to allow the RF signal to leak out or receive.



Specifications

Type		5D		10D		20D	
		Dual	5G	2.4G	5G	2.4G	5G
2400 MHz	Attenuation (dB/m)	0.46	-	0.19	-	0.08	-
	Coupling loss (dB)	60	-	58	-	65	-
5200 MHz	Attenuation (dB/m)	1.08	0.65	-	0.29	-	0.16
	Coupling loss (dB)	57	60	-	63	-	67
Inner Conductor	Diameter(mm)	2.0		4.8		9.0	
	Material	Copper		Copper-clad Aluminum		Copper pipe	
Insulation	Diameter(mm)	5.3		12.0		22.0	
	Material	Highly foamed PE		Highly foamed PE		Highly foamed PE	
Sheath	Diameter(mm)	7.0		16.0		Minor axis : 29 Major axis : 40	
	Material	PE or Flame-retardant PE					



Note: We can design and offer the WBLCX with other electrical properties that accommodate the various site conditions.

Case Study : Hotel

Summary of advantage by WBLCX

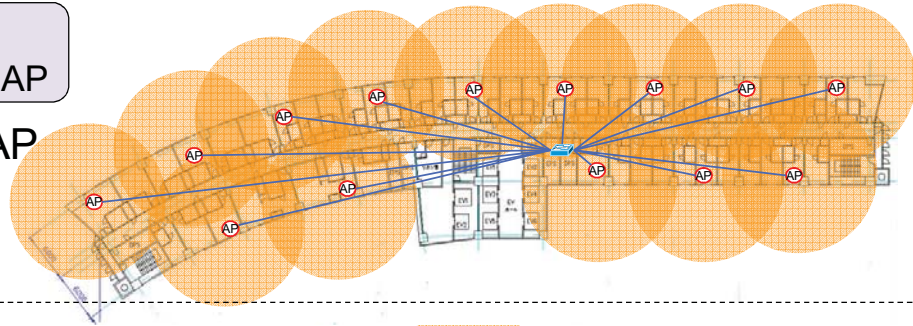
1. WAP can be installed **"ANYWHERE"**

2. Reduce the number of WAPs

3. Eliminate signal shadows

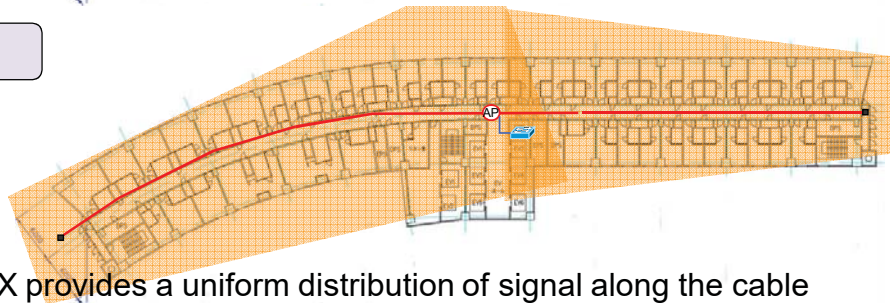
Case1:
Conventional WAP

14 sets of WAP



Case2:WBLCX

1 set of WAP



WBLCX provides a uniform distribution of signal along the cable

Suitable Location for WBLCX

Hotel, Hospital, Campus
Office with security



Underground carpark



Shopping Mall

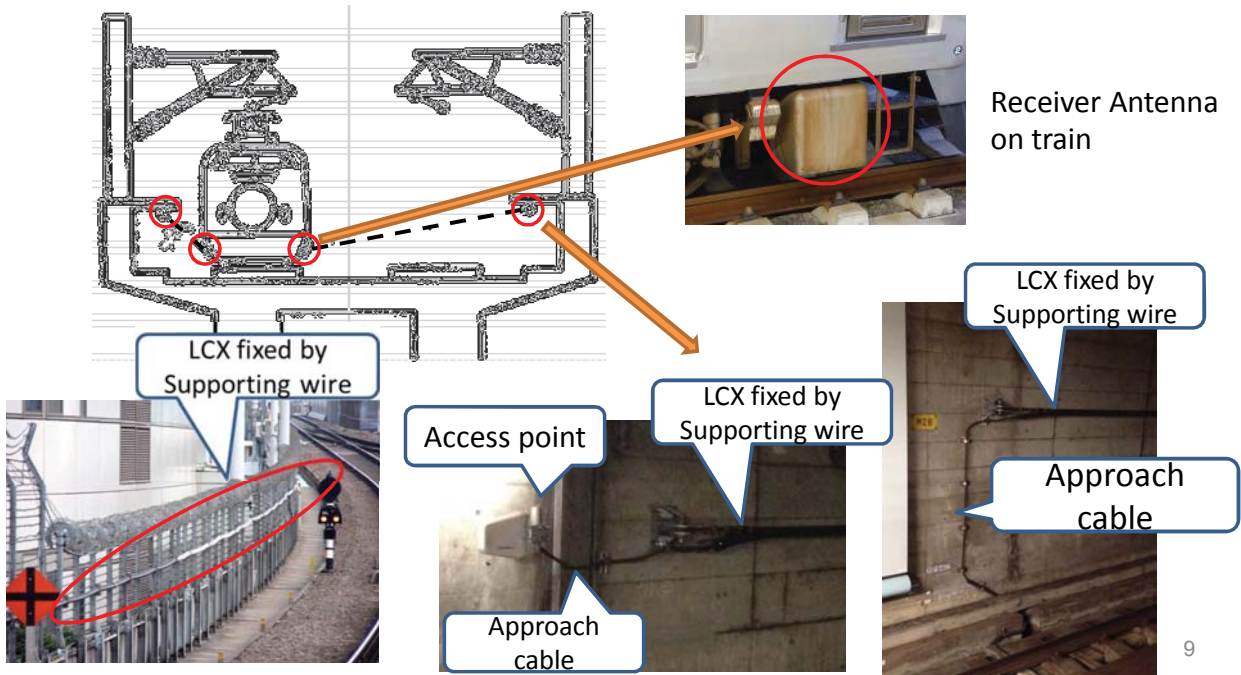


Factory Warehouse



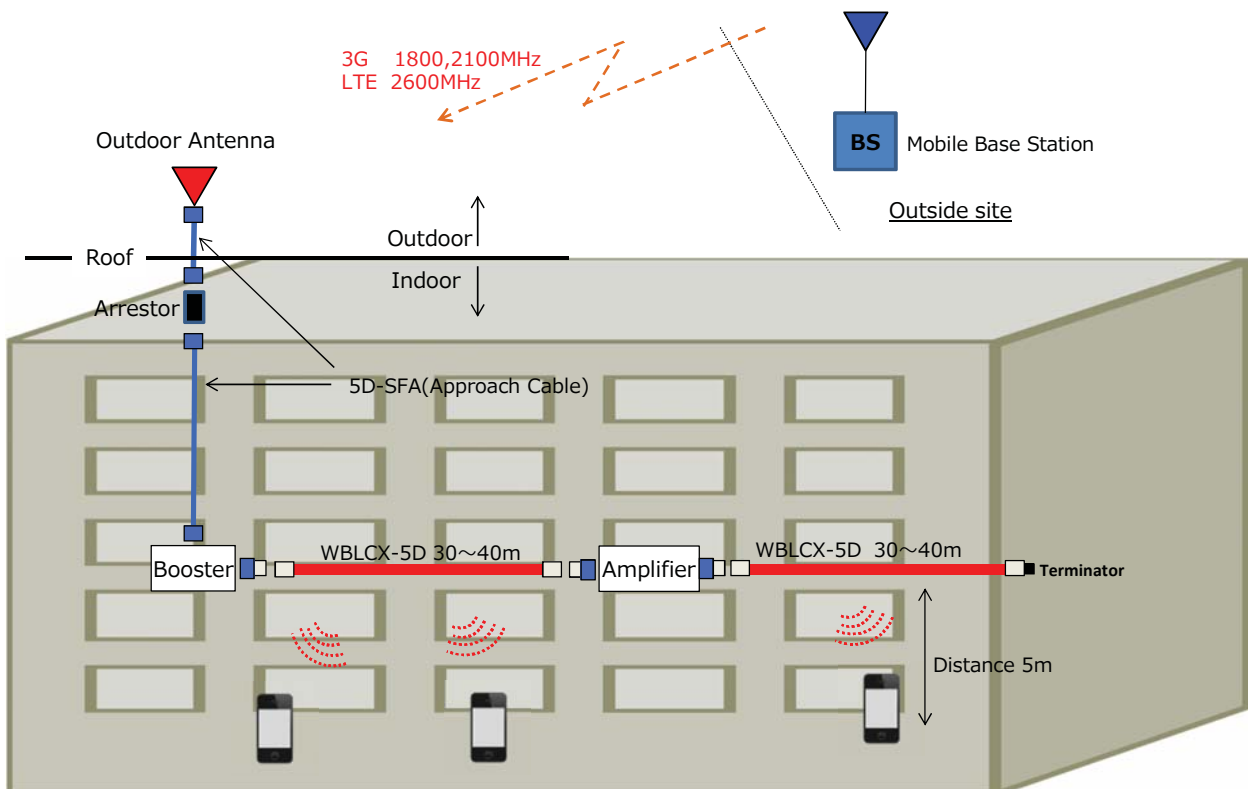
Japanese Shinkansen(High Speed Railway)

Wi-Fi is available by Leaky Coaxial Cable. Wi-Fi signal is transmitted at 400MHz by LCX and up converted to 2400MHz in the train. The end of LCX are fixed by supporting wire.



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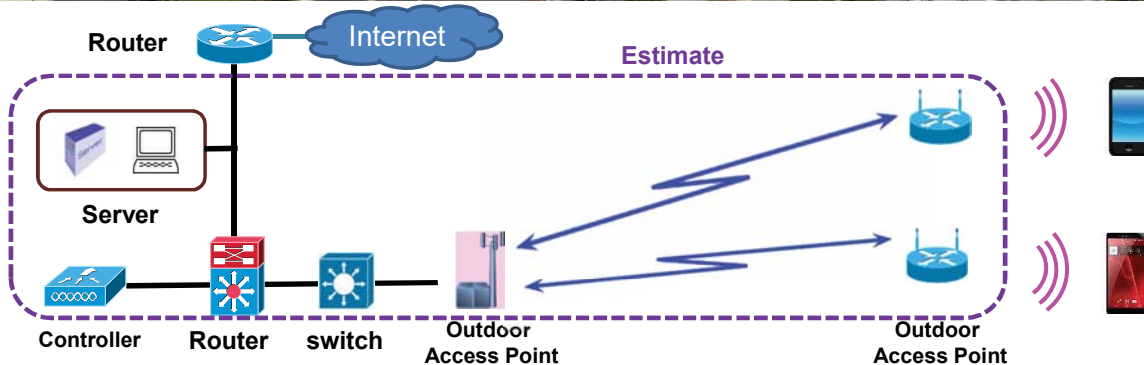
Typical Solution in the Building for Mobile



2) Fixed Wireless Access(FWA) for WI-FI

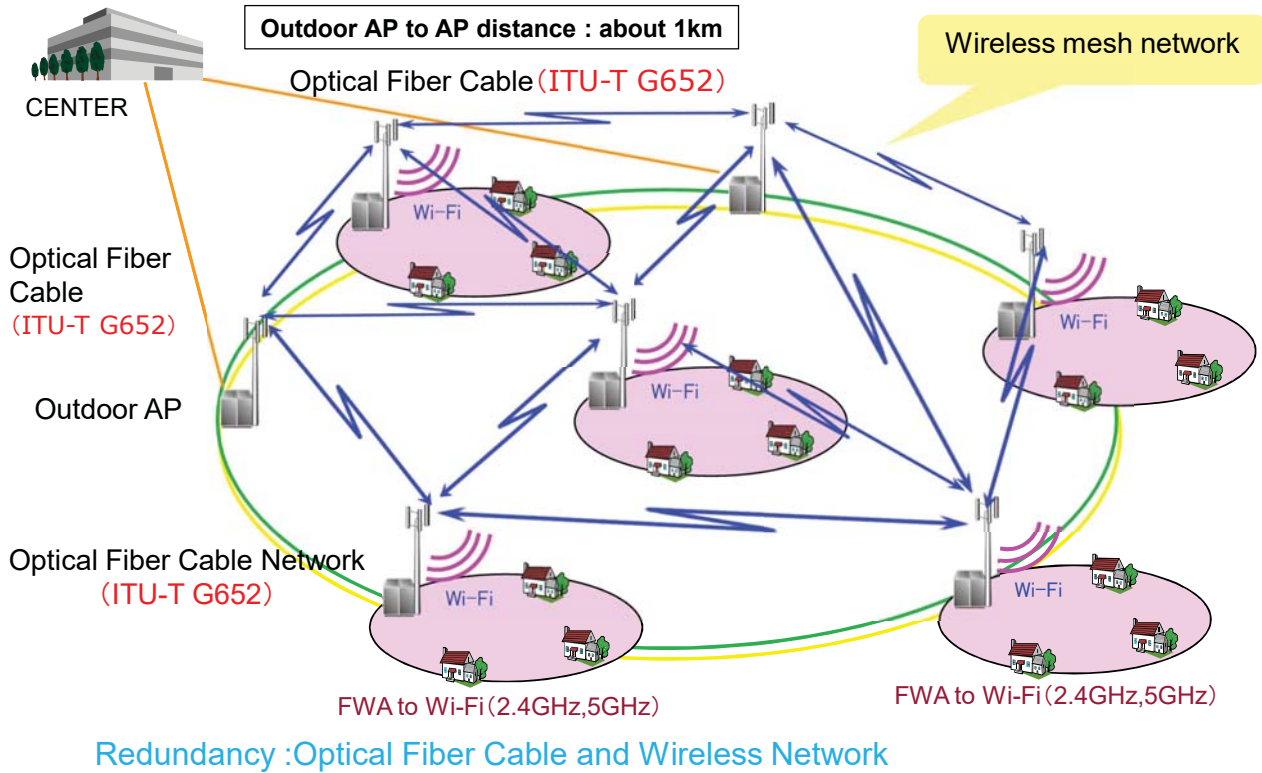
Basic design for open space by FWA

FWA is the process of accessing a communicating network or internet on a fixed wireless networks. It is a type of wireless broadband data communication, which is performed between two fixed locations



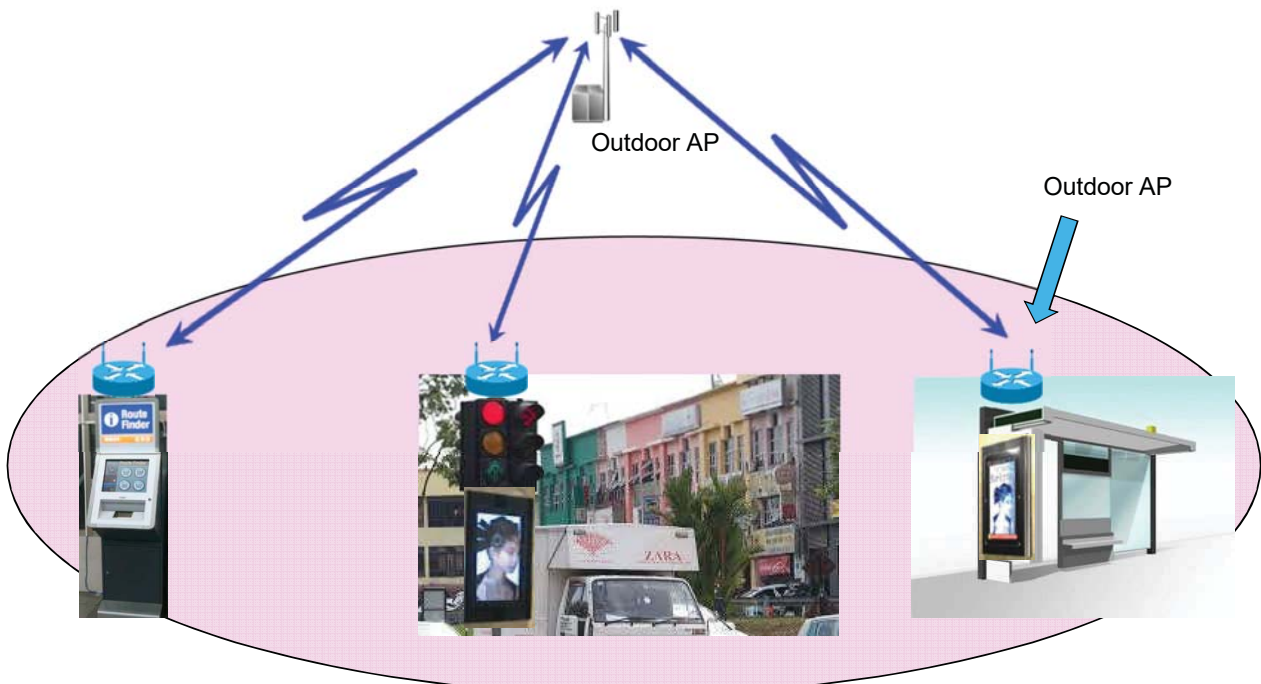
Outline for FWA and Wi-Fi

Frequency : 4.9 and 5GHz



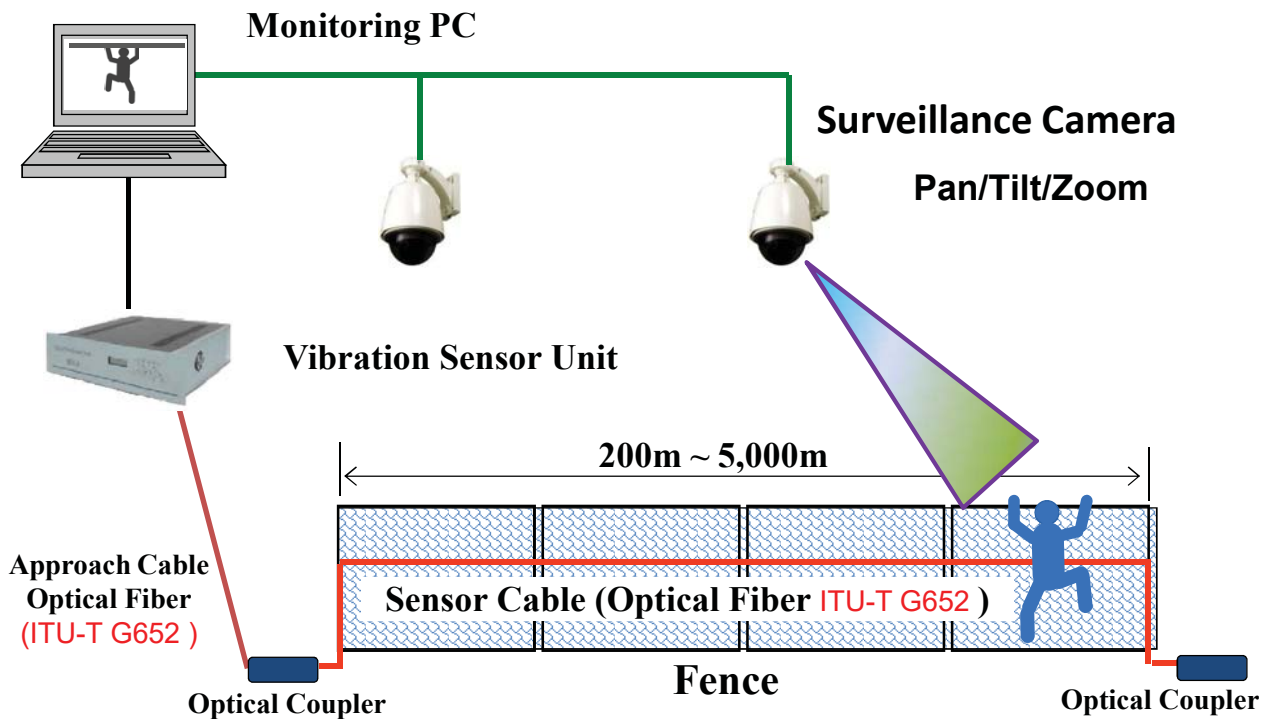
Wi-Fi for Marketing

Data Distribution System to Digital signage
 At Bus Stop , Street intersection and Street Light etc.



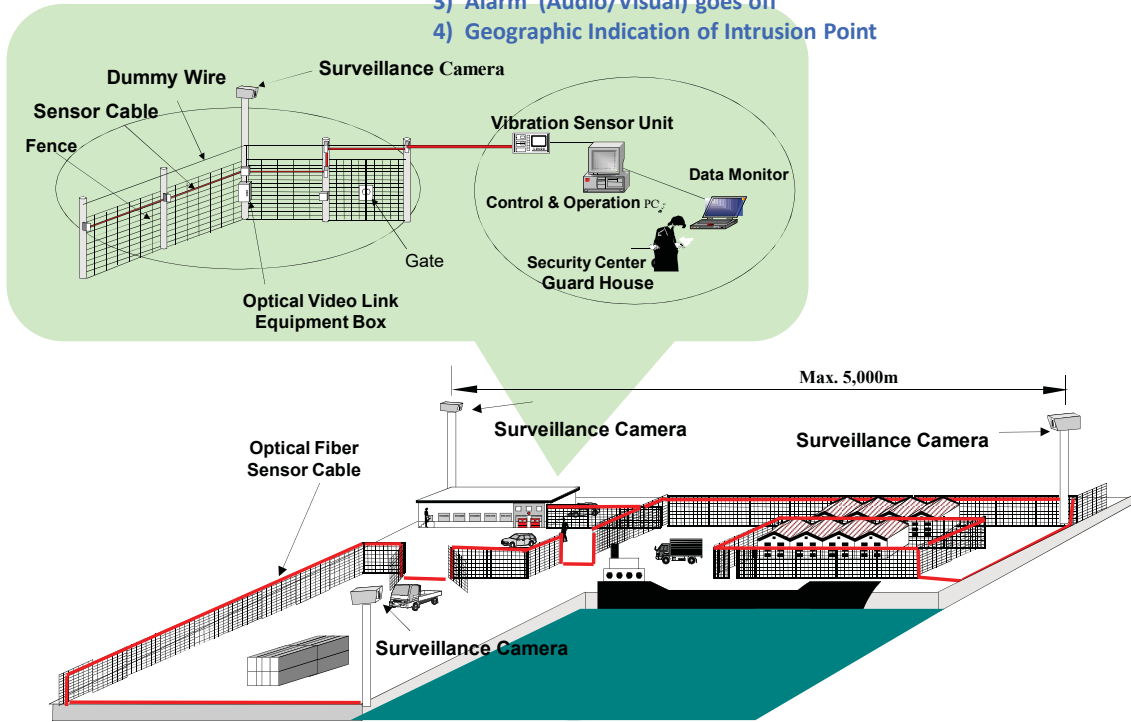
3) Optical Fiber Perimeter Intrusion Detection System (PIDS)

System Overview



Case Study for Port Security

- 1) Surveillance Camera automatically can shoot detected location
- 2) Recording (Log & Video Data) of intrusion
- 3) Alarm (Audio/Visual) goes off
- 4) Geographic Indication of Intrusion Point



Vibration Sensor Unit (OFVF-01HP)



Item	Specification
Type of Fiber	SM10/125
Type of Connector	SC-TYPE
Sensing Section	200m~5km
Distance Accuracy	within $\pm 2.5\%$ of Sensing Section Length
Output Spec.	RS-232-C Contact Output 128
Power Supply	AC85V~265V / 100W or less
Operating Temperature Range	Sensor Section -10~50°C Sensor Unit 0~40°C
Dimension (mm)	W482×D430×H132.5 EIAJ 3U

Typical Applications

- 1) Airport / Seaport**
- 2) Military Area**
- 3) Chemical Plant**
- 4) Solar /Nuclear Power Plant**
- 5) High Speed Train Area**

4) Quick Charger for EV

Specification for Quick Charger

DC Quick Charger

Input voltage	3 phase AC 400V \pm 15%
Output voltage/current	DC 50-500V, 0-125A
Rated output power	50kW

Dimension	W900 \times H1910 \times D1000 (mm)
Weight	800kg
Enclosure	IP54



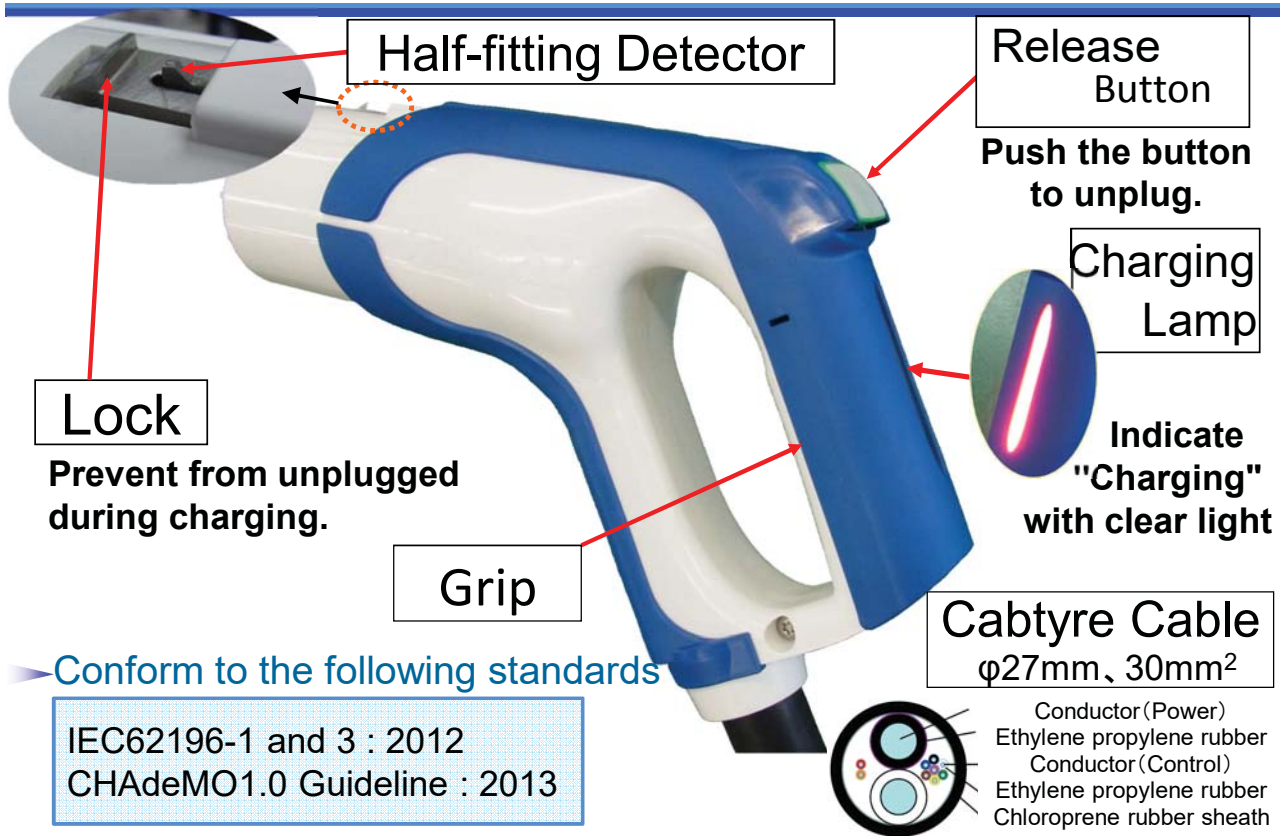
Feature of Quick Charger

The Quick Charger can charge up to **80% of the battery capacity in 15 to 30 minutes** (depending on the types of EV), which enables EV to run about 75 miles(228km) The charging time is drastically reduced **from 4-6 hours** needed for full charge by **AC normal** charger through a power outlet(240V).

The Quick Charger adopts the **CHAdEMO protocol**, which ensures compatible **DC charging** for all the EV employing the protocol.

The Quick Charger has **record of Four-Year** safe operation in Japan to get high estimation from users.

Charging Connector



Charging Point in Japan

Quick chargers are installed at petro stations, highway parking , shopping Mall and local government buildings.

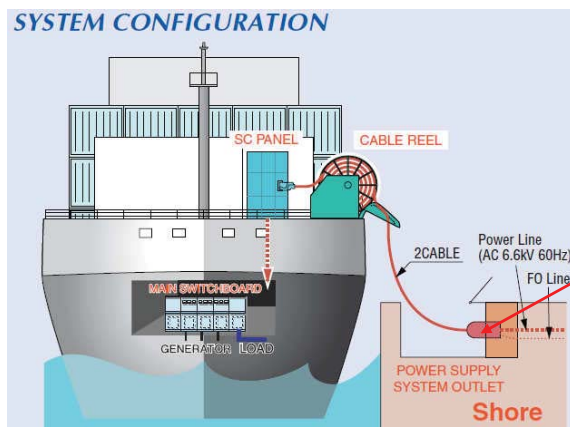


5) High-Voltage Shore Connection System (HVSC System)

Introduction

The "*HVSC-Systems*" is to reduce emissions from diesel engines on container ship while berthing at a Port. Vessel fleet operators can turn off engines and connect the vessel to shore power using HVSC-Systems. They plug into shore power instead of using onboard engines.

HVSC-Systems consist of plug, socket-outlet and cab-tire cable in accordance with IEC/ISO/IEEE 80005-1.



Plug & Socket-outlet

Data for Plug and Socket-outlet : Standard IEC 62613-1.

ITEM	Type A	Type B	Type C
Applicable ship type	Cruise ships	Container Vessel	Ro-Ro cargo ships Ro-Ro passenger ships
Rated voltage	AC12kV	AC7.2kV	AC12kV
Rated current	500A	350A	350A
AC withstand voltage	32kV , 1min.	20kV , 1min.	32kV , 1min.
Impulse withstand voltage	±75kV , 10 times	±60kV , 10 times	±75kV , 10 times
Degrees of Protection	IP66/IP67H	IP66/IP67H	IP66/IP67H

Fujikura Product

Specification for Connection Cable

6/10kV CI-PNCT-185 3C × 185mm² + 1C × 95mm² + 4C × 2.5mm² + GI 62.5/125 × 6C

