

### INTRODUCTION

INS Global is a communication engineering company that develops innovative products for the life safety industry and BMS (Building Management Systems).

INS Global products are designed to support a diverse range of protocols with a modular interface structure allowing for the rapid introduction of new protocols and emerging technologies.

A standardized ICNS protocol introduces a common data format for combining all customer equipment protocols into a single consolidated view for local and remote presentation.

This application note covers the following hosting scenarios:

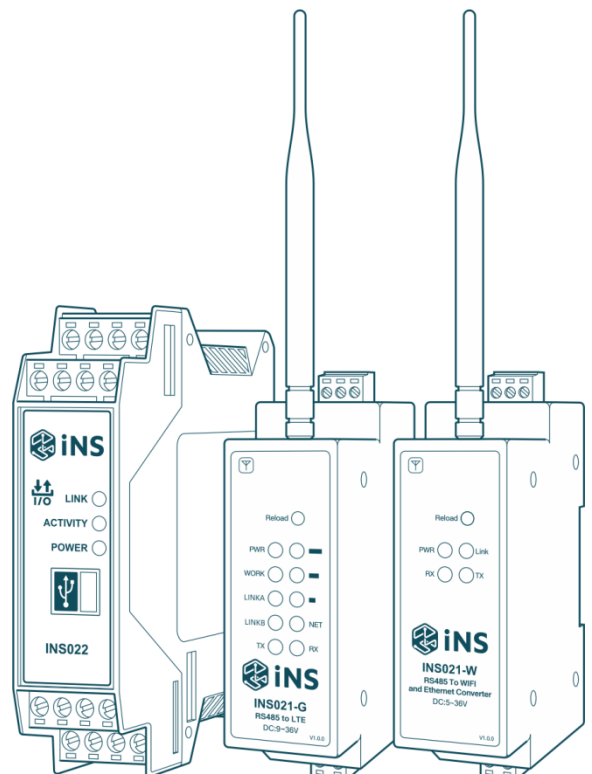
- Locally hosted event repository and notification system
- Cloud hosted event repository and notification system
- Redundant and locally hosted notification via SMS
- IRIS100/200 Interface Topologies

### PRODUCTS

- IRIS100
- IRIS200
- IRIS-TAB
- INS021-G
- INS021-W
- INS022
- CEVIEW

### ADVANTAGES

- Remotely access the status of an installation prior to visiting the site
- Generate weekly/monthly/yearly reports detailing system performance
- Review maintenance requirements prior to visiting the site
- Live remote monitoring of weekly Fire System Bell Tests
- Remotely identify unstable FAP networks
- Remotely view detailed information about the activation of a loop device
- Receive Fire Alarm Panel (FAP) event notifications via secure email or SMS
- Receive FAP event notifications via smartphone App
- Remotely monitor FAP power supply and battery failures
- High gain external WiFi



# 1. EVENT NOTIFICATION

## APPLICATION 1A: FAP EVENT NOTIFICATION

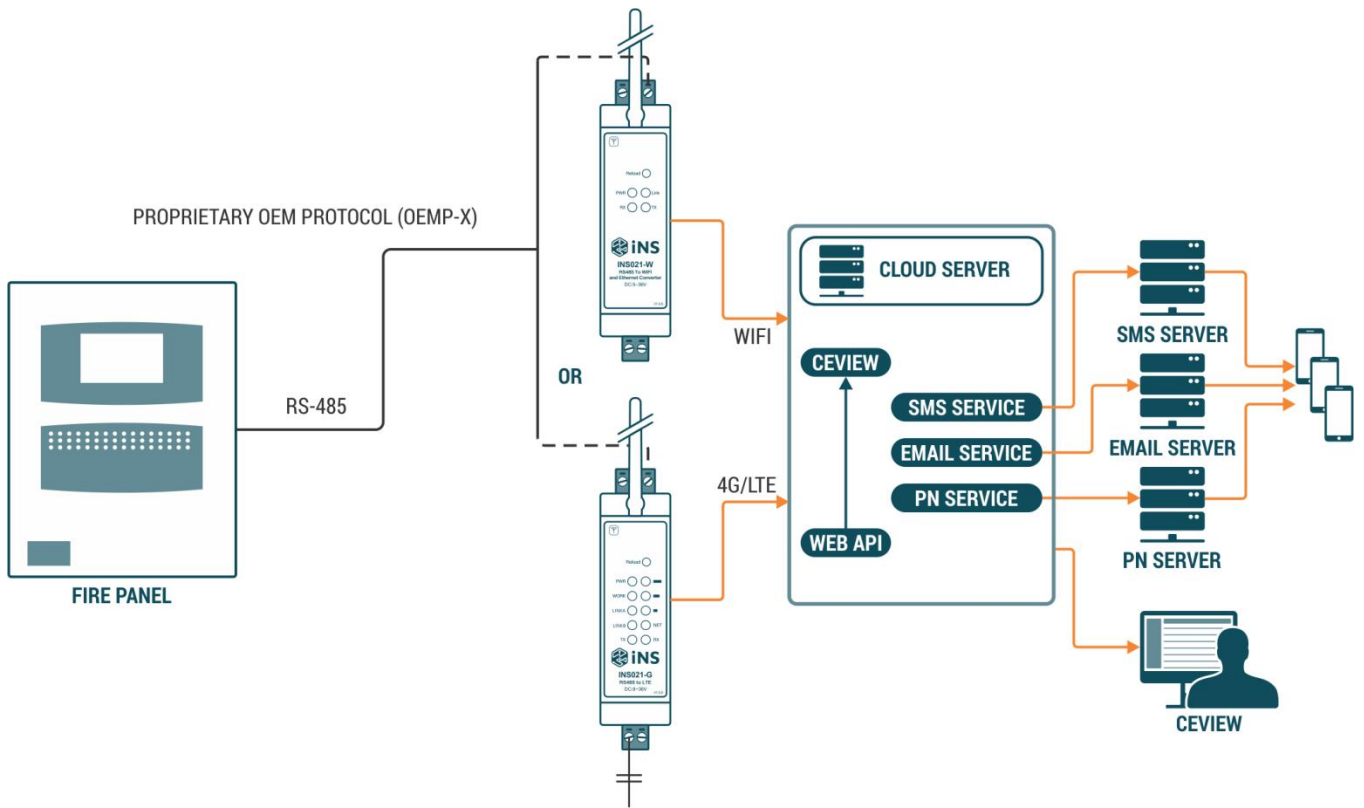


FIGURE 1: APPLICATION 1A - FAP EVENT NOTIFICATION

## APPLICATION 1B: MULTI-INPUT EVENT NOTIFICATION

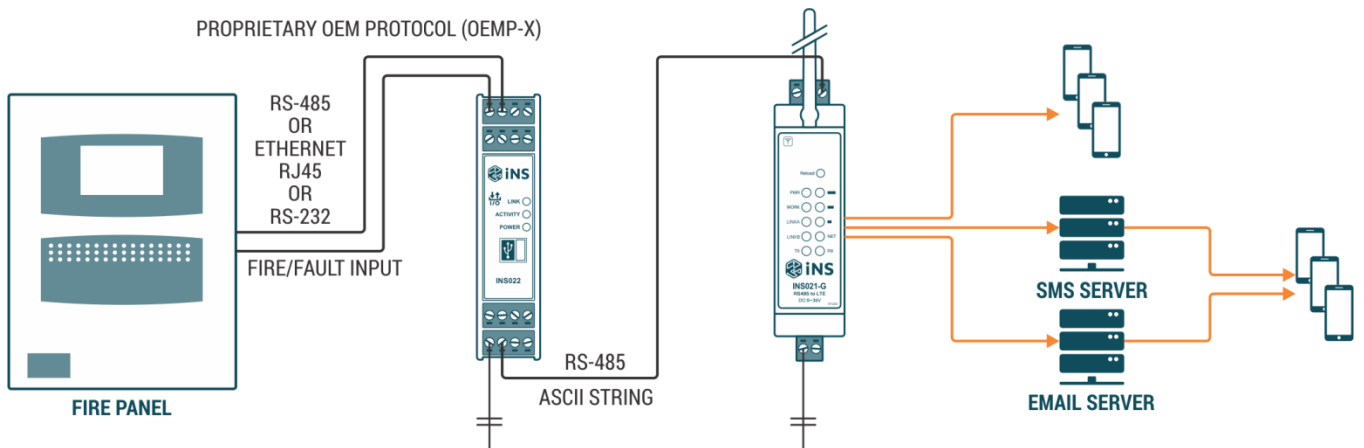


FIGURE 2: APPLICATION 1B - MULTI-INPUT EVENT NOTIFICATION

## APPLICATION 1C: MULTI-INPUT EVENT NOTIFICATION

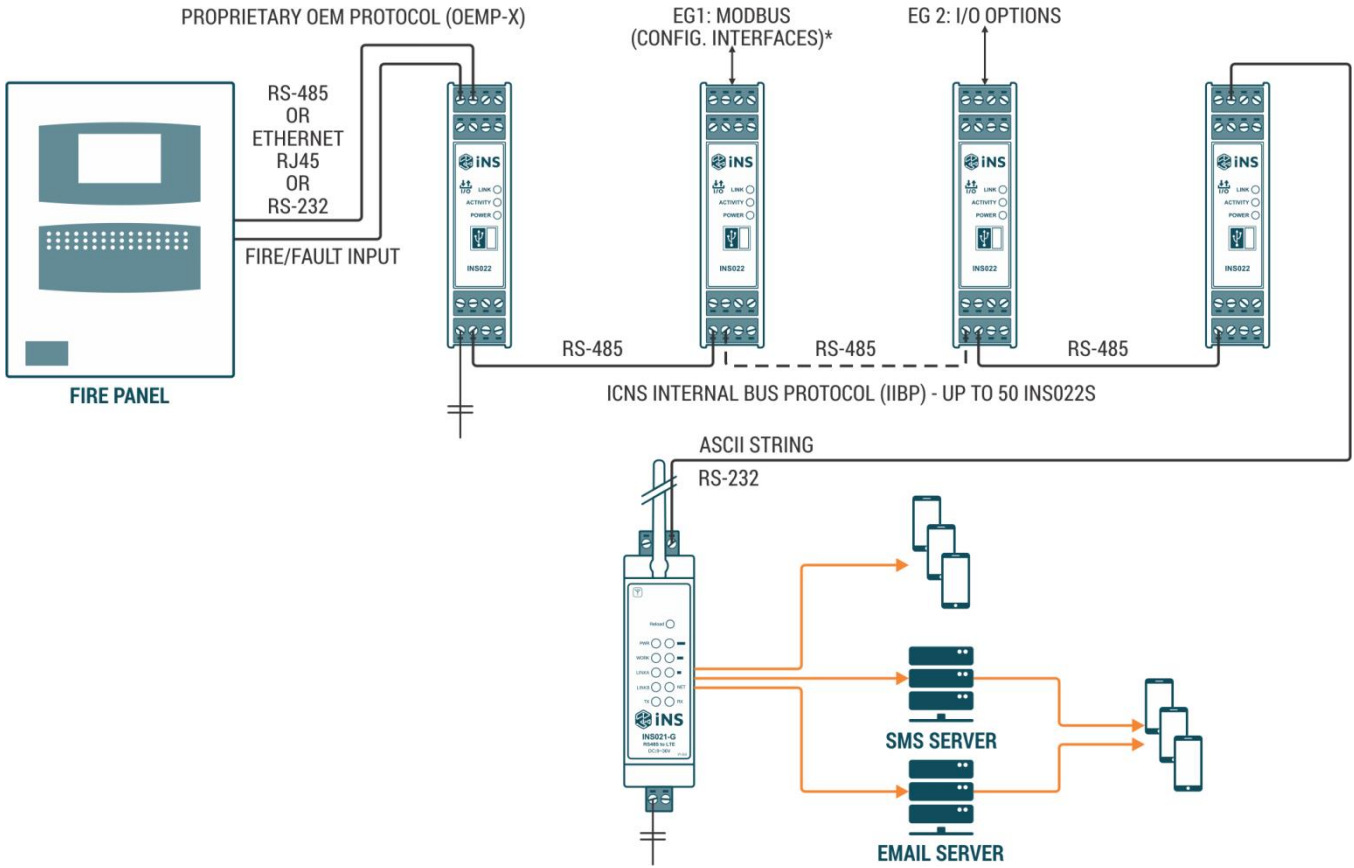


FIGURE 3: APPLICATION 1C - MULTI-INPUT EVENT NOTIFICATION

## CONFIGURABLE INTERFACES

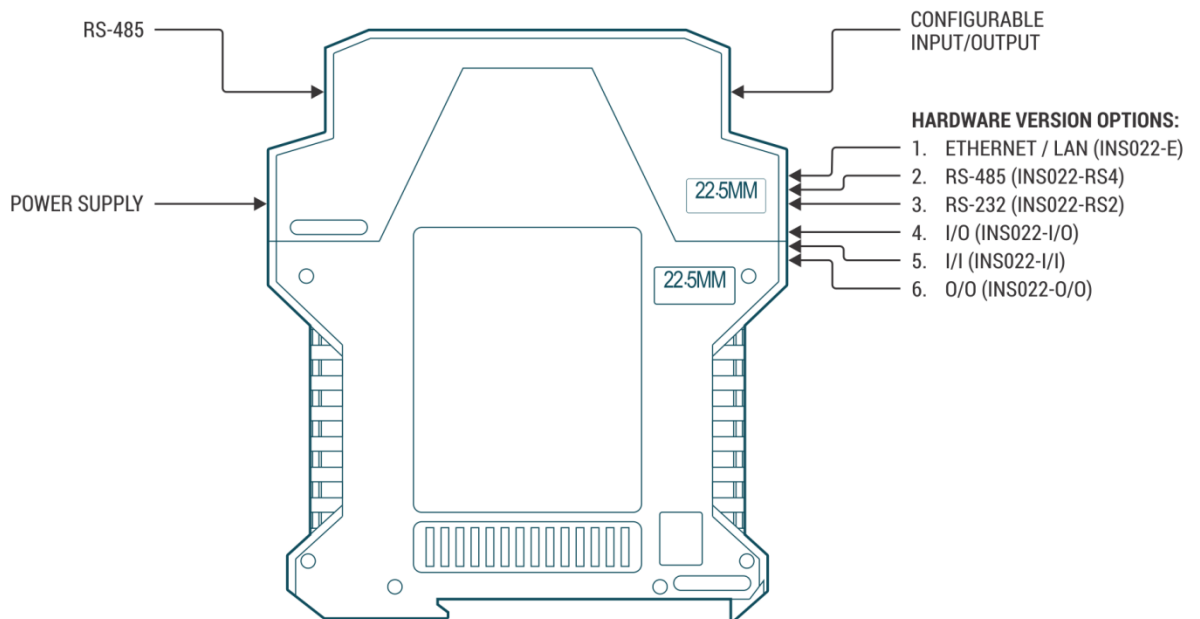


FIGURE 4: \* CONFIGURABLE INTERFACES

## 2. REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION

### APPLICATION 2A: FIRE PANEL REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION

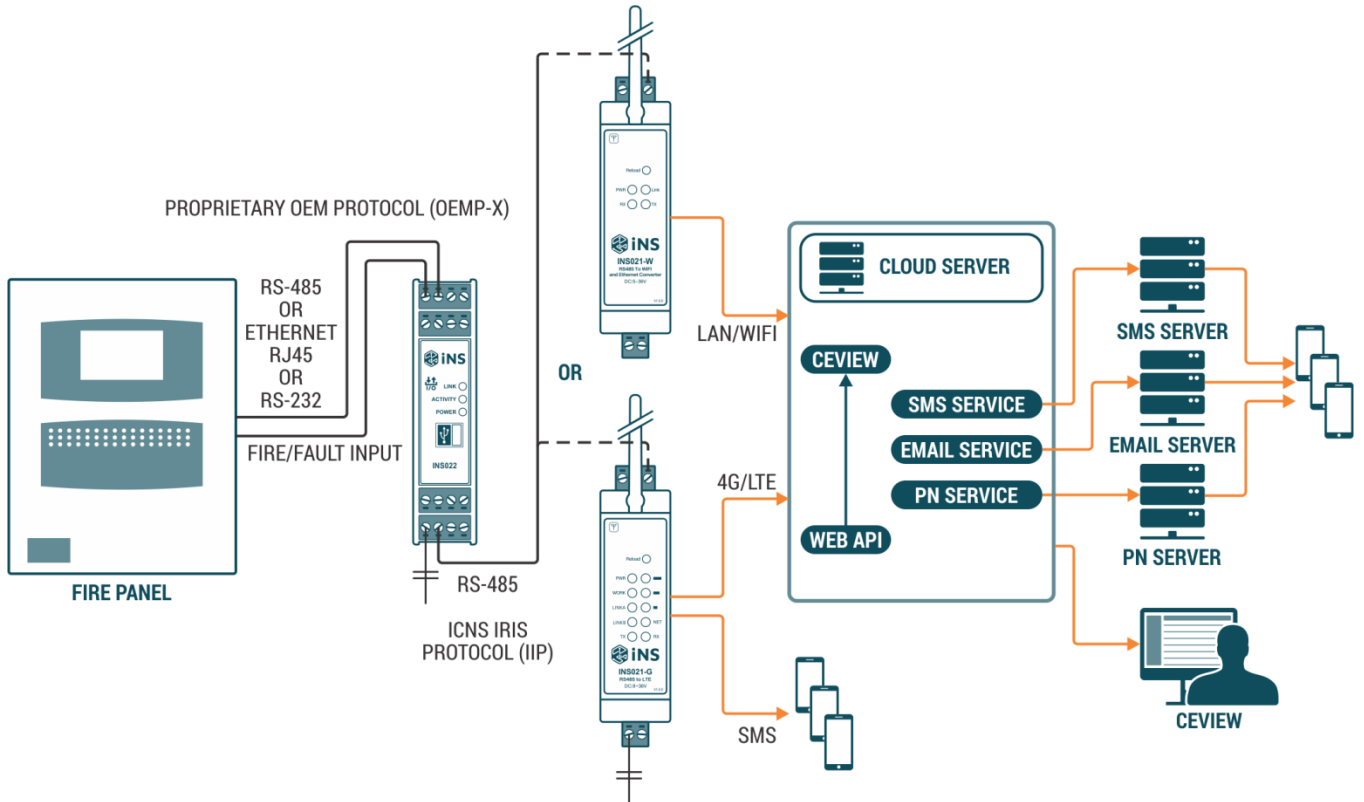


FIGURE 5: APPLICATION 2A - FIRE PANEL REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION

## APPLICATION 2B: MULTI-INPUT REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION

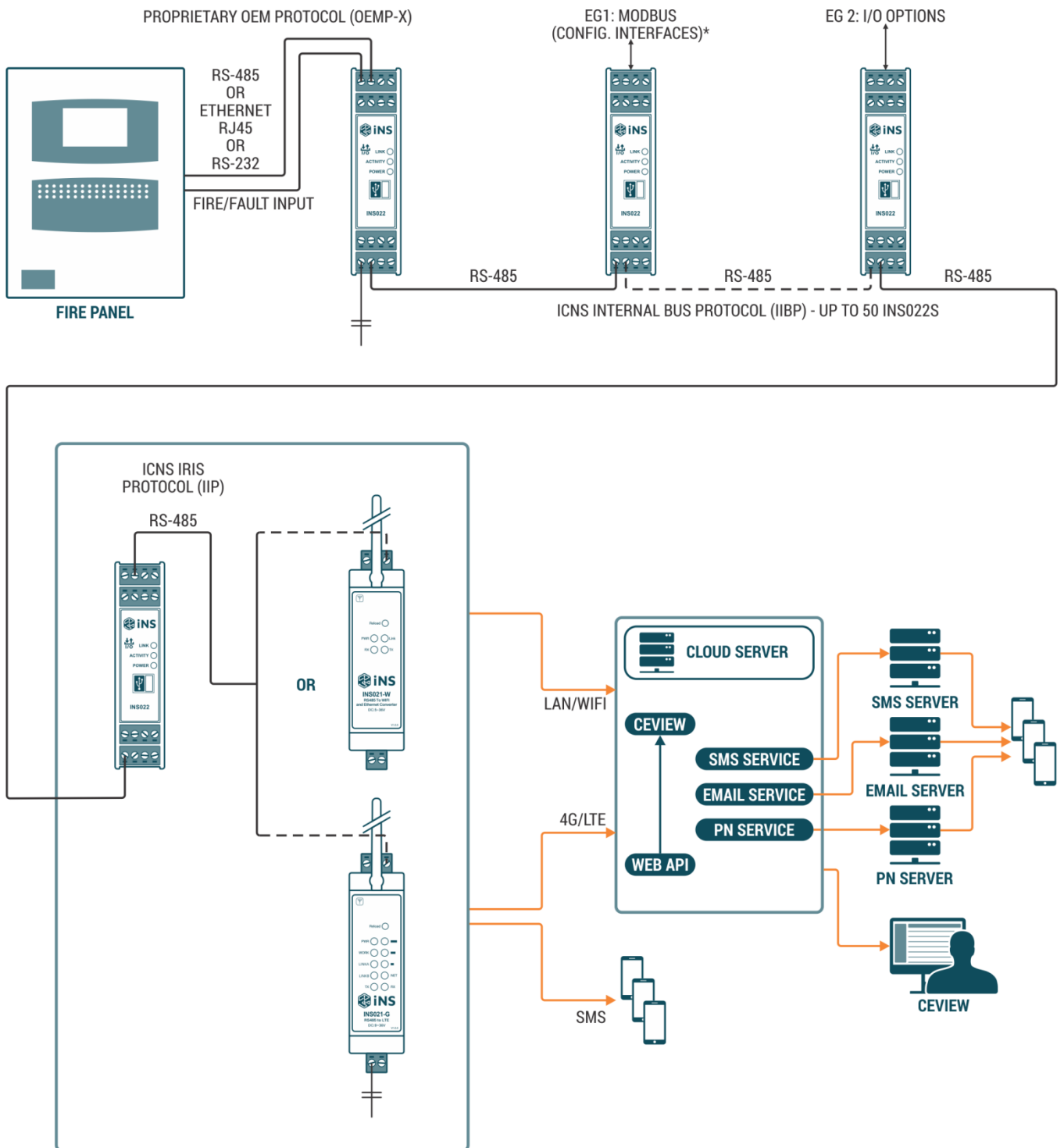


FIGURE 6: APPLICATION 2B - MULTI-INPUT REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION

### 3. LOCAL & REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION

#### APPLICATION 3A - LOCALLY HOSTED FIRE PANEL EVENT MONITORING, NOTIFICATION & REPORT GENERATION

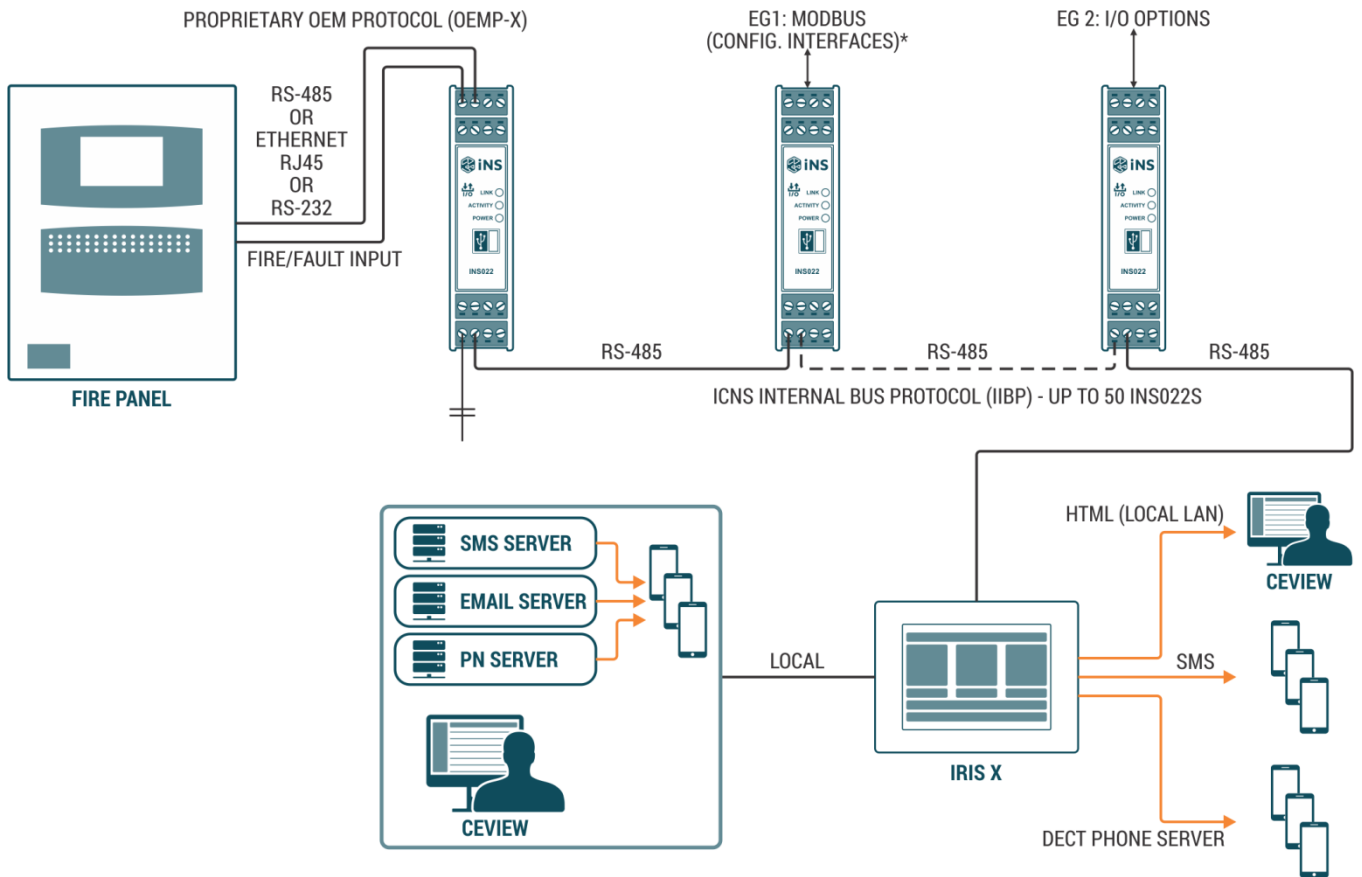


FIGURE 7: APPLICATION 3A - LOCALLY HOSTED FIRE PANEL EVENT MONITORING, NOTIFICATION & REPORT GENERATION

## APPLICATION 3B – FIRE PANEL REMOTE MONITORING, NOTIFICATION & REPORT GENERATION WITH LOCAL EVENT DISPLAY, REDUNDANT DATABASE, LOCAL REPOSITORY

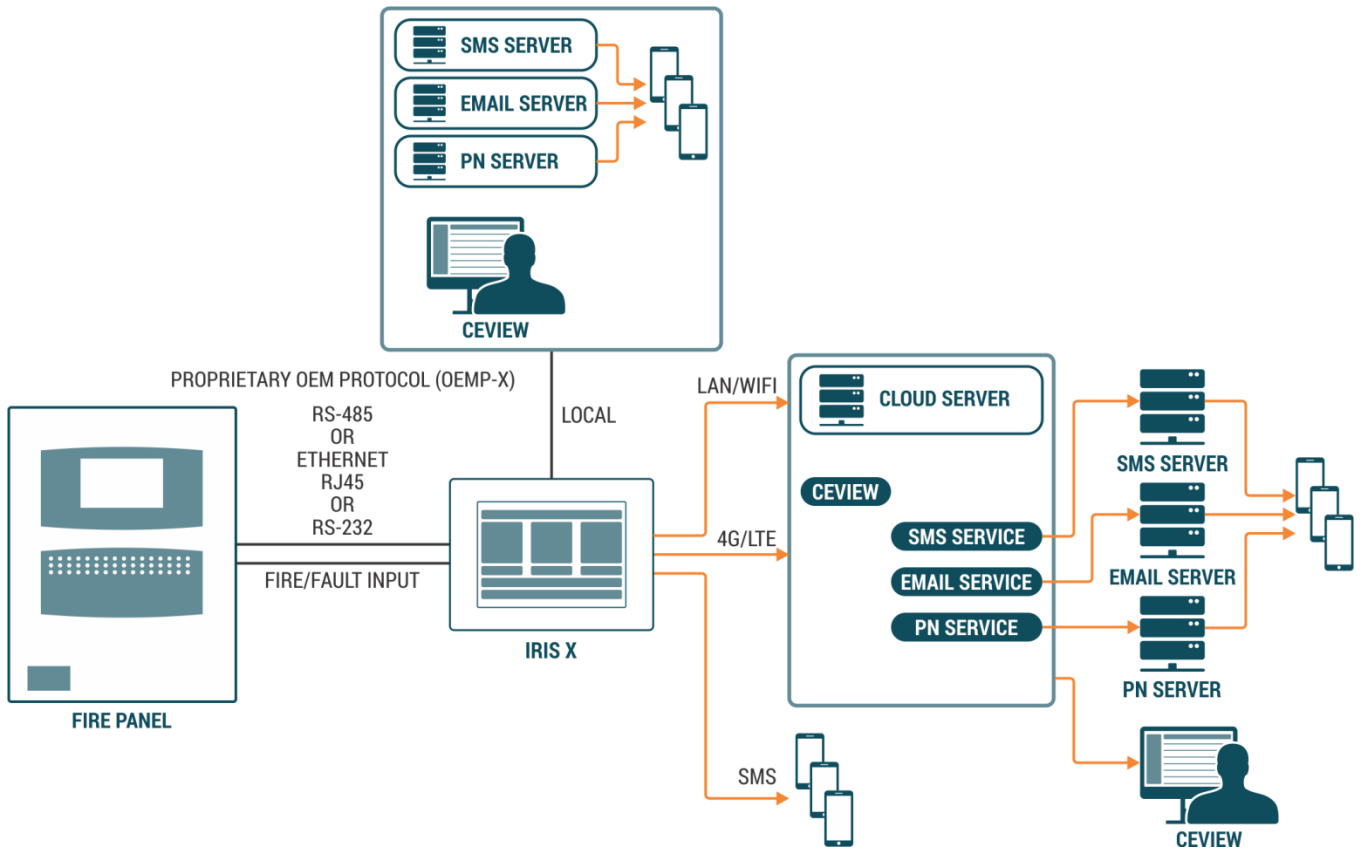


FIGURE 8: APPLICATION 3B – FIRE PANEL REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION WITH LOCAL EVENT DISPLAY, REDUNDANT DATABASE, LOCAL REPOSITORY

# APPLICATION 3C - MULTI-INPUT REMOTE MONITORING, NOTIFICATION & REPORT GENERATION WITH LOCAL EVENT DISPLAY, REDUNDANT DATABASE, LOCAL REPOSITORY

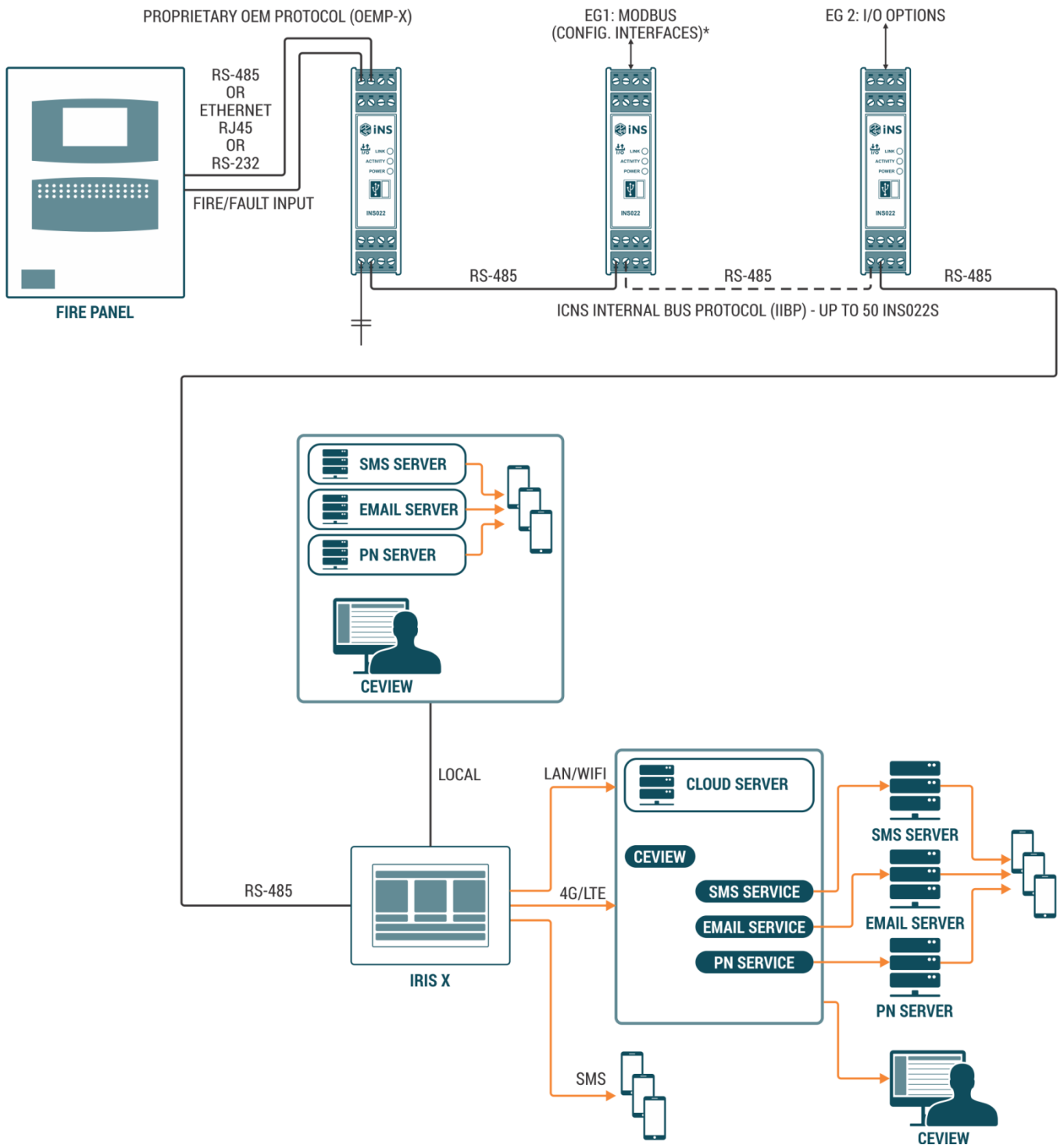


FIGURE 9: APPLICATION 3C - MULTI-INPUT REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION WITH LOCAL EVENT DISPLAY, REDUNDANT DATABASE, LOCAL REPOSITORY

## 4. LOCAL & REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION

### APPLICATION 4A – FIRE PANEL REMOTE MONITORING, NOTIFICATION & REPORT GENERATION WITH LOCAL EVENT DISPLAY, REDUNDANT DATABASE, LOCAL REPOSITORY

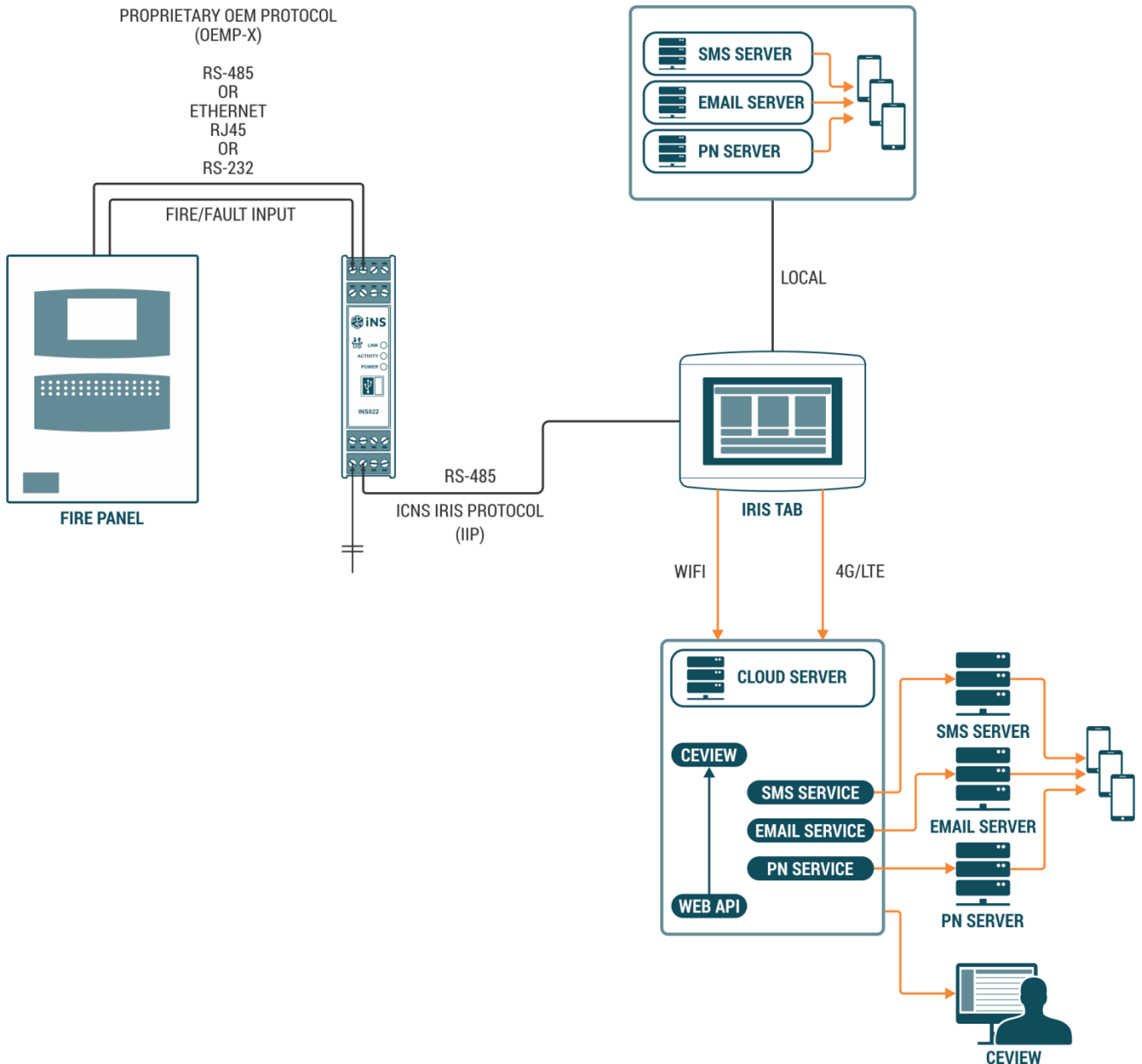


FIGURE 10: APPLICATION 4A – FIRE PANEL REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION WITH LOCAL EVENT DISPLAY, REDUNDANT DATABASE, LOCAL REPOSITORY

## APPLICATION 4B - MULTI-INPUT REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION

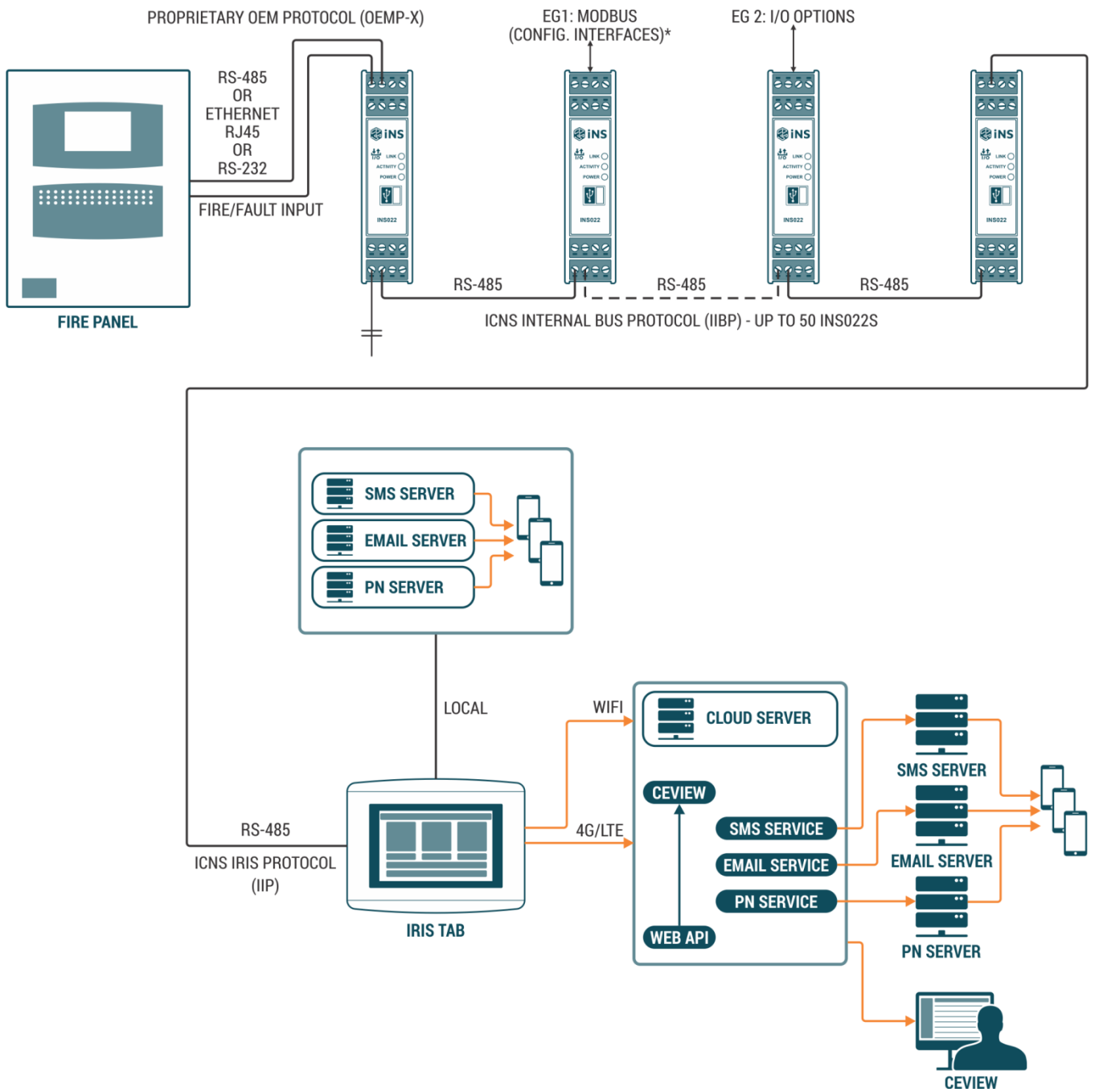


FIGURE 11: APPLICATION 4B - MULTI-INPUT REMOTE MONITORING, NOTIFICATION AND REPORT GENERATION

# 5. FIELD APPLICATION

## APPLICATION 5A – FIELD APPLICATION

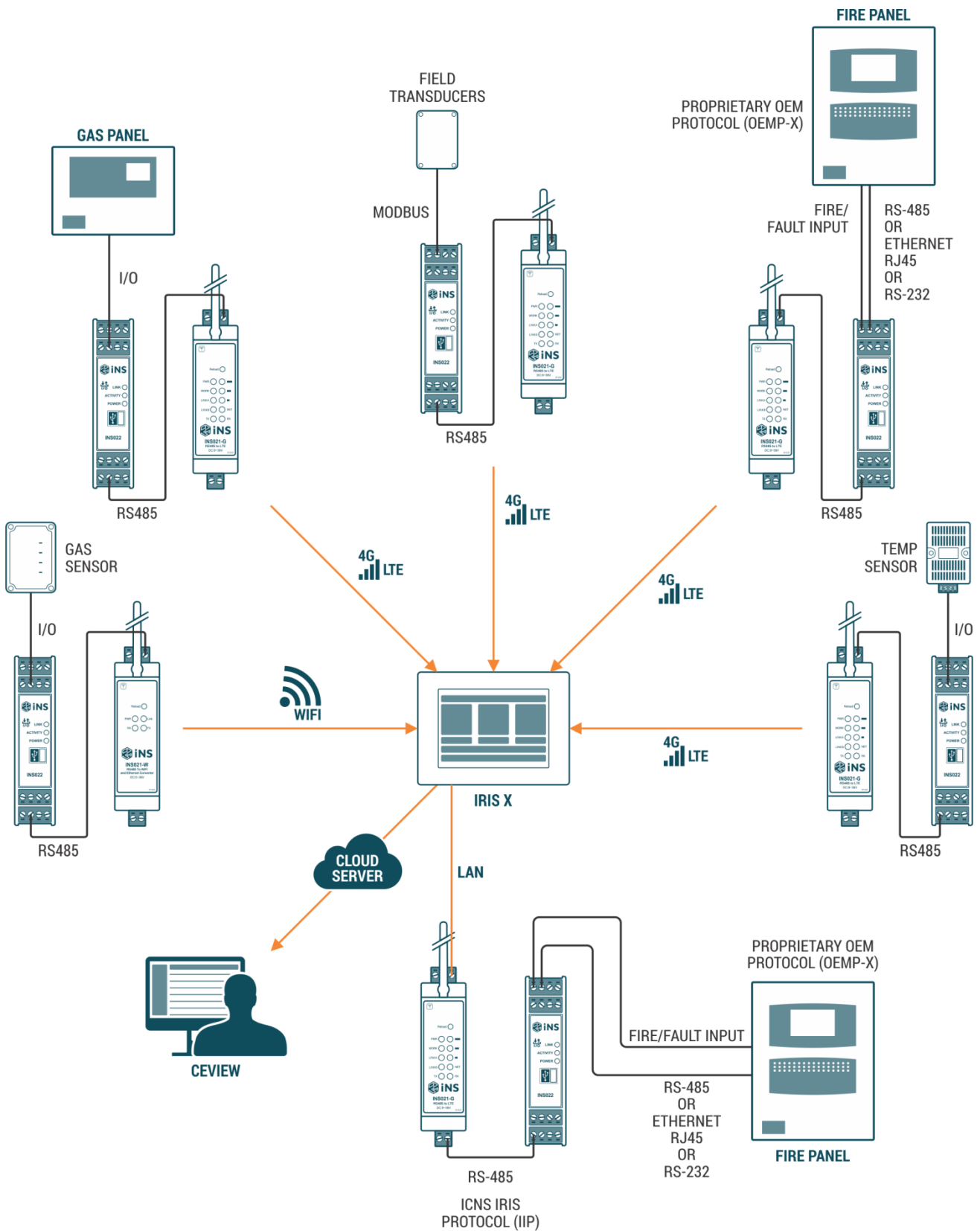


FIGURE 12: APPLICATION 5A – FIELD APPLICATION

## APPLICATION 5B – FIELD APPLICATION

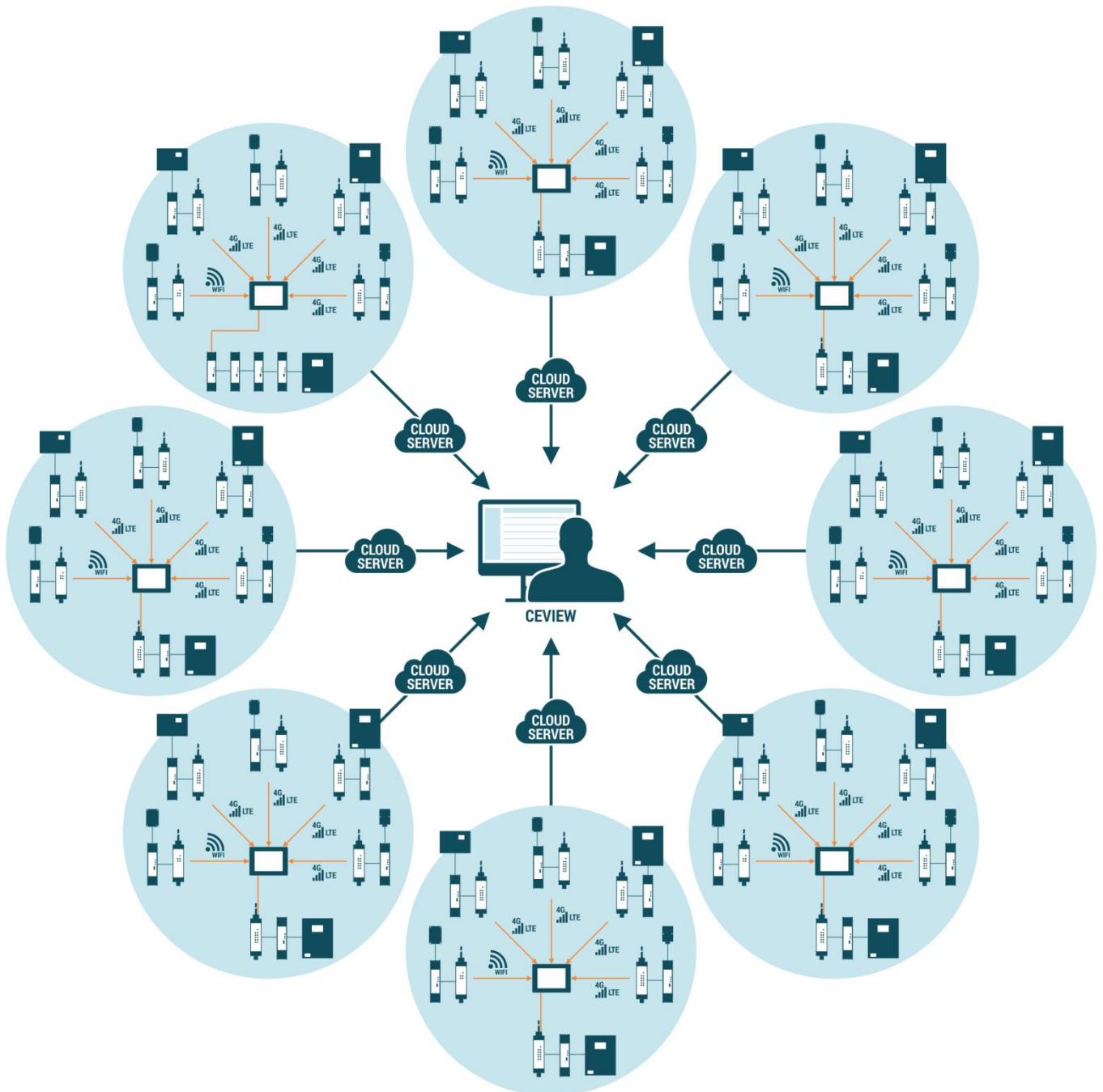


FIGURE 13: APPLICATION 5B – FIELD APPLICATION

# PRODUCT FEATURES

		1A	1B	1C	2A	2B	3A	3B	3C	4A	4B
<b>FEES</b>	YEARLY SUBSCRIPTION	✓			✓	✓		✓	✓	✓	✓
<b>REVIEW</b>	REDUNDANT DATA STORAGE	✓			✓	✓		✓	✓	✓	✓
	3 YEARS DATA RETENTION	✓			✓	✓		✓	✓	✓	✓
	LOCAL REPOSITORY						✓	✓	✓	✓	✓
	REMOTE REPOSITORY	✓			✓	✓		✓	✓	✓	✓
	AUTOMATED INCIDENT REPORT GENERATION	✓			✓	✓		✓	✓	✓	✓
	LOCALLY HOSTED SERVER						✓				
	CLOUD HOSTED SERVER				✓	✓		✓	✓	✓	✓
	WIFI /4G-LTE / BLUETOOTH CONNECTIVITY	✓			✓	✓		✓	✓	✓	
<b>NOTIFICATION</b>	STANDARD SMS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MASS SMS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MASS PUSH NOTIFICATION	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MASS EMAIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>INTERFACES</b>	FIRE ALARM PANEL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GAS PANEL			✓		✓	✓		✓		✓
	I/O INTERFACE			✓		✓	✓		✓		✓
	MODBUS INTERFACE			✓		✓	✓		✓		✓
	REDUNDANT FAULT & FIRE I/O		✓	✓	✓	✓	✓	✓	✓		✓
<b>TRANSLATOR</b>											
	INS022-E/RS4/RS2/10/II/00		✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>GATEWAYS</b>	IRIS-100						✓	✓	✓		
	IRIS-200						✓	✓	✓		
	IRIS-TAB									✓	✓
	INS021-G	✓	✓	✓	✓	✓					
	INS021-W	✓			✓	✓					
<b>PSU</b>	REDUNDANT POWER SUPPLY SUPPORTED (IRIS-200 ONLY)						✓	✓	✓		
	BACKUP BATTERY (IRIS-200 ONLY)						✓	✓	✓		
<b>GUI</b>	7" TOUCH SCREEN						✓	✓	✓		
	10" TOUCH SCREEN						✓	✓	✓	✓	✓

# SPECIFICATIONS

## INS022

DIMENSIONS	
Dimensions	99.1 X 111.9 X 22.5 mm
Weight	200g
Mounting	DIN Rail
POWER	
Operating voltage	18 to 36V (24V DC nominal)
Current Rating	150mA (at 24V)
INTERFACES	
RS-485	Port A - 1: Earth, 2: Shield, 3: Data+, 4: Data- with Fixed Termination (120Ω) Port B - 1: Earth, 2: Shield, 3: Data+, 4: Data- with Fixed Termination (120Ω)
RS-232	Port C - 1: Shield, 2: Rx (IN), 3: Tx (OUT), 4: Earth with Standard RS-232 interface
PSU	Port D - 1: +12V TO 36V DC, 2: 0V, 3: No Connect, 4: Earth Baud Rate - 9600 to 115200 (selectable / configurable)
USB	USB Micro-B connection (Device / Slave Mode)
TEMPERATURE	
Operating	-10 to 50°C
Storage	-40 to 70°C
AGENCY APPROVALS AND STANDARDS	
Agencies	CE, UKCA, RoHs, WEEE compliant
EMC	EN 61000-6-2
EMC	EN 61000-6-4
Safety	EN 60950

## INS021-W

ETHERNET	
Port Number	1 Ethernet Ports: 1 x WAN/LAN
Buffer	RX/TX: Max 4K bytes
Protection	2KV Electromagnetic isolation for Ethernet port
Speed Rate	10/100Mbps, MDI/MDIX
WIFI	
Certificate	FCC/CE
WiFi	802.11 b/g/n
Frequency Range	2.412GHz-2.484GHz
Transmit Power	802.11b: +19dBm(Max.@11Mbps) 802.11g: +18dBm(Max.@54Mbps) 802.11n: +17dBm(Max.@HT20,MCS7) +17dBm(Max.@HT40,MCS7) User can configure power
Receive Sensitivity	802.11b: -89dBm(@11Mbps) 802.11g: -81dBm(@54Mbps) 802.11n: -73dBm(@HT20,MCS7) -71dBm(@HT40,MCS7)
HARDWARE	
Interface Standard	RS485:300~230.4Kbps 485 interface (surge, lightning and overcurrent protection)
Input Voltage	DC5~36V
Operating Temp	-40°C~85°C
Storage Temp	-40°C~125°C
Size	109.66*28*64.71mm(L*W*H)
SOFTWARE	
Network Mode	Station/AP/AP+Station
Security	WPA-PSK/WPA2-PSK
Encryption	TKIP/AES
Work Mode	Transparent transmission/Serial command/ https Client/Modbus TCP<=>Modbus RTU
Setting Command	AT+ command
Networking Protocol	TCP/UDP/ARP/ICMP/DHCP/DNS/https
Max Client Number in TCP Server Mode	24
Configuration	Web server + AT command
Customer application software	Supports customized application software

## INS021-G

LTE	
LTE Category	LTE Cat.4
FREQUENCY BANDS	
LTE FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28
LTE TDD	B38/B39/B40/B41
WCDMA	B1/B2/B4/B5/B6/B8/B19
GSM	B2/B3/B5/B8
TRANSMISSION SPEED	
LTE-FDD	150Mbps(DL)/50Mbps(UL)
LTE-TDD	130Mbps(DL)/30Mbps(UL)
DC-HSDPA	42Mbps (DL)
HSUPA	5.76Mbps (UL)
WCDMA	384Kbps(DL)/ 384Kbps(UL)
GSM (EDGE)	296Kbps (DL)/ 236.8Kbps (UL)
GSM (GPRS)	107Kbps (DL)/ 85.6Kbps (UL)
SERIAL PARAMETERS	
Interface	RS485 (Terminal)*1
Data Bits	8
Stop Bits	1,2
Parity Bits	NONE, ODD, EVEN
Baud Rate	2400~230400
PHYSICAL INTERFACES	
SIM/USIM card	1.8V/3V (medium card)
Antenna	SMA Female
USB	USB 2.0
Indicators	POWER, WORK, NET, LINK, RSSI
Reload	Button
Reset	/
HARDWARE CHARACTERISTICS	
Input Voltage	9V~36V
Connector	Terminal
Housing material	ABS Plastic
Dimensions(mm)	44.5×31.8×13.94 (L*W*H)
Operating temperature	-30°C ~ +75°C
Storage Temperature	-40°C ~ +85°C
Operating humidity	5%~95%
Storage humidity	5%~95%
SOFTWARE	
Protocol	TCP/UDP/DNS/HTTP/FTP
Serial to network	2 sockets, default A
SMS	PDU/TEXT
Configuration	Serial, Net, SMS AT commands
Cache	5 packets
PACKAGING MECHANISM	
Packaging time(ms)	100~60000, default 100
Packaging length(byte)	100~1000, default 1000
OTHERS	
Tool	USR-Cat 4 Configuration Utility
Certifications	CE, ROHS

