

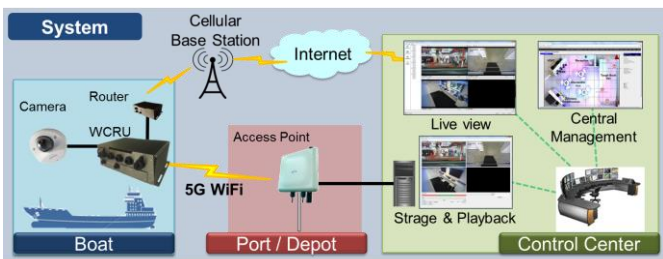


**Local & Central recording**  
**Live view by mobile network**  
**Central Management**

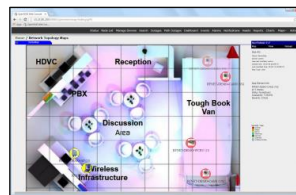
**Introduction**

To secure boat against any threat in the sea, video surveillance is indispensable to leave evidences and to prevent threat. RFNet specializes video surveillance system in transportation sector which requires very strict, tough circumstance to operate.

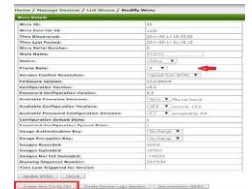
**System Overview**



- Live view in the cockpit  
 To catch the situation around boat in the cockpit, WCRU show the live view on display connected by HDMI.
- Central Management  
 WNCS-233-NMS is not only network management software but it can configure detail WCRU and AP via network. So you can easily find failure of equipment and change the configuration.



NMS Map View



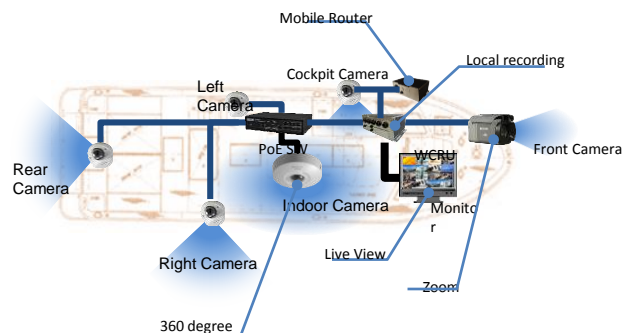
Configuration of WCRU by NMS

**Key features**

- Local & Central Recording  
 Camera images either JPEG/JXR or H.264 are always recorded in WCRU(Wireless camera recorder unit) installed in the boat. You can choose storage size from various kind of storage suitable to your requirement. Once the boat comes back to depot, WCRU detect WiFi AP, then WCRU automatically starts to upload stored image to server. Max. 18 cameras can be recorded by 1 WCRU.
- Live view by mobile network  
 As far as the boat reach mobile network, you can monitor live view from central operation center via internet. The communication between operation center and boat is secured by VPN connection.

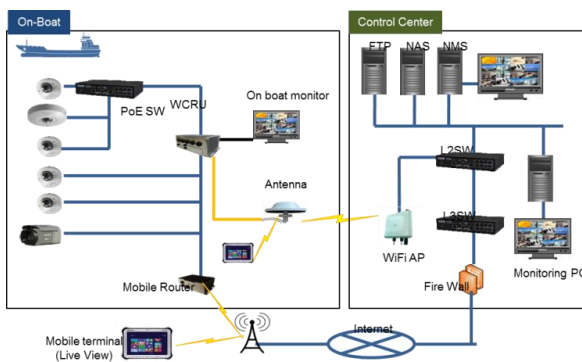
**On boat Diagram**

You can choose number of cameras, positions, and types flexibly on boat not only for outside but for inside. In cockpit, you can see the live view for checking anything.



## System Diagram

We provide not only our products, but suitable solution based on your requirement and cooperative system to customer's existing system such as network configuration etc.



## Rugged Recorder - WCRU III

- WiFi (IEEE802.11a/b/g/n)
- Up to 18 Camera
- 4 PoE port
- Audio input
- Low power consumption
- Selectable storage size
- HDMI out (under development)



Wireless / Network	
Wireless LAN Standards	IEEE 802.11a/b/g/n
11n mode	Two con-current 2x2 MiMo radios up to 300 Mbps
Operating Frequencies	IEEE 802.11b/g/n: 2.400 - 2.484 GHz IEEE 802.11a/n: 5.150 - 5.850GHz
Antenna Type	2 external antenna
RoHS Compliant	Yes
Security	Hardware accelerated government-grade security support including WEP, TKIP/AES/WPA and TKIP/AES/WPA2
MTBF for 2.4GHz and 5GHz Radios	More than 150,000 hrs
Interface Connectors	
Power IN	2 pin industrial connector
WAN Port (to Wireless Transmitter)	Industrial RJ45 connector
LAN1-LAN4 ports	4 x Industrial RJ45 connector
USB (host)	1 x USB 2.0 Host Port
HW RESET button	Pin hole
WiFi Antenna	2 x SMA(F) connector
Power LED	Power up status
Recording LED	Recording status
Display output	1 x HDMI port
Storage	1 x 2.5" SSD (removable), or 1 x 2.5" HDD with anti-vibration (removable)
Accelerometer	Built-in accelerometer
Input and output ports	8 x GPIO port (4 input and 4 output)
Mic input	1 x Mic input port
Audio output	1 x audio output port
Environmental and Reliability	
IP Rating	IP54
Operating Temperature	0°C +70°C (Asia) -30°C +70°C (Other)
Storage Temperature	-40degC +80degC
Humidity	10%~90% max non-condensing
Physical	
Dimension LxWxH	220x180x60mm
Wide range of DC input	WCRU-III A, 10.8V ~ 36.0V DC WCRU-III B, 16.8V~53.3V DC
Power Consumption	15.25 Watts typical, 17 watts Max

## Key components

### Outdoor Access Point - AP5012

- WiFi (IEEE802.11a/b/g/n)
- PoE
- IP67
- Low power consumption
- External/Integrated Antenna



Wireless / Network	
Wireless LAN Standards	IEEE 802.11a/b/g/n
11n mode	Two con-current 2x2 MiMo radios up to 300 Mbps
Operating Frequencies	IEEE 802.11b/g/n: 2.412 - 2.472 GHz IEEE 802.11a/n: 5.150 - 5.825GHz
Antenna Type	AP5012-1E1S : Integrated AP5012-2E2N, AP5012-1E2N: 2 external
Security	WPA-PSK/WPA2-PSK (TKIP & AES) WPA/WPA2 (TLS, TTLS & PEAP), Static WEP up to 152 bits
Interface Connectors	
Power IN	IEEE802.3af & Pseudo 12-48V PoE
LAN port	AP5012-1E1S : 1 AP5012-2E2N : 2
WiFi Antenna	SMA(F) connector
Power LED	Power up status
Singal LED	Signal status
Environmental and Reliability	
IP Rating	IP65
Operating Temperature	-35degC +70degC
Storage Temperature	
Humidity	~95% max non-condensing
Physical	
Dimension LxWxH	
Power input	IEEE802.3af & Pseudo 12-48V PoE
Power Consumption	9 Watts typical,

## Network Camera

Our system support Panasonic i-pro network cameras



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