Using Your Mobile Devices with Your Onboard Electronics

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What I’ll Cover ...

- Current situation on many boats
- Typical “legacy” network
- How do I add wireless capability
  - e.g. connect your iPad or computer
- Options for wireless
- Questions

**NOTE**: I’ll mention many solutions - lots more exist & products constantly changing
The Challenge...
Typical current situation

- Focus of this talk – working with existing electronics
- Older electronics “networks”
  - Furuno, Raymarine, Garmin, Standard Horizon
- Typical interfaces
  - NMEA 0183, SeaTalk, proprietary networks
- Often combo of products
  - Raymarine autopilot, Garmin chartplotter, SH radio
- Often products are no longer supported and compatible upgrades not available
- Current stuff basically works but no upgrade path
Rise of mobile devices on boats

- Navigation apps for iPad, Android, PCs, smartphones
- Marine network monitoring
- Race management (e.g. iRegatta)
- Remote control apps for marine chartplotters

**iPad and iPhone**
- iNavX
- iRegatta
- TimeZero

**Android**
- iSailor
- SeaPilot
- Navionics

**Windows tablets**
- Coastal Explorer
- Nobeltec
- OpenCPN

*And lots more…*
Wireless

- We’re talking Wi-Fi not Bluetooth
- Three possible scenarios (and probably more)
  1. NMEA to Wi-Fi Gateways
     - Stream marine data to wireless devices such as iPads, tablets, PCs
     - E.g. GPS, depth, AIS, wind
     - Attach Wi-Fi gateway to output wires from instrument(s)
  2. Some chartplotters have Wi-Fi capability
     - E.g. Garmin 741xs, Simrad Go7
  3. Some devices have Wi-Fi capability built-in plus multiplexing
     - E.g. Vesper Marine XB8000 Class B AIS
- Typically connect to gateway “hotspot” and setup apps to use marine data via IP address and TCP or UDP port
Wi-Fi Gateways

- NMEA 0183 to wireless devices using Wi-Fi
- Connect NMEA or serial “wires” to device which then converts into “wireless” data

**WiFly RN340**
- Serial to Wi-Fi
- $53

**ATC-2000WF**
- Serial or NMEA to Wi-Fi
- $143

**Comar NMEA-2-WIFI**
- 2 x NMEA to Wi-Fi
- $224

Other similar solutions from DMK, ShipModul, Brookhouse
Example Wi-Fi Installation

iPad data
- GPS
- Depth
- AIS

AIS to Wi-Fi

AIS to chartplotter

12vDC Battery

NMEA output

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Another Wi-Fi Installation

iPad data
- GPS
- AIS

- Complete installation takes about 2 minutes
- Adapter cost < $100
Rose Point Nemo

- NMEA 0183: 4 in/2 out
- NMEA 2000 Network

Connection options:
- Ethernet Network
- Wireless Router
- Coastal Explorer
- Rose Point ECS

Navigation Apps
Legacy Raymarine Scenario

Interface Challenges…
- SeaTalk?
- NMEA 0183 devices?
- NMEA 2000 network?
- SeaTalkNG?
- Wi-Fi to mobile devices?
- Connection to PC?
ShipModul MiniPlex

Legacy Raymarine scenario

NMEA 2000

SeaTalk

NMEA 0183

Wi-Fi

iPad, Android & Windows

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Wi-Fi-enabled Chartplotters

- Allows chartplotter display to be duplicated on a wireless tablet
- For example Garmin 741xs plus Garmin Helm app
  - Gives you a second display on an iPad or Android tablet

- Also available on other systems e.g. Simrad, Raymarine
Multifunction device with Wi-Fi

- Special case with Vesper XB8000
- Class B AIS Transponder
  - Outputs AIS and GPS data
- NMEA 2000 gateway
- NMEA 0183 gateway
- Plus all data multiplexed
  - USB for wired computers
  - Wi-Fi for mobile devices
- All for about $700
Example Configuration

**Vesper XB8000, chartplotter, iPad, PC**

- **GPS antenna**
- **Vesper XB8000**
  - Class B AIS Transponder
- **Computer AIS view**
  - AIS/GPS/NMEA data to computer via USB (or WiFi)
- **iPad iNavX AIS view**
  - AIS data to Chartplotter via NMEA 0183 or NMEA 2000
- **Chartplotter**
  - data to XB8000 via NMEA 0183 or NMEA 2000
- **VHF to transponder**
- **AIS/GPS/NMEA data to iPad over WiFi**

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Wi-Fi Setup: iPad & iNavX
Wi-Fi Setup: PC with Coastal Explorer
New Wi-Fi electronics?

**Sounders and radar**

Vexilar SonarPhone
$179.00
Other devices now supported e.g. Simrad

Furuno Wireless Radar
$1,250.00
Other considerations

Waterproof cases, mounts, power...

LifeProof waterproof case & mount

Andres case with power & RAM mount

OtterBox (not waterproof!) & RAM mount

SeaSucker

Also check out Rokk, Lifedge (Scanstrut)
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Thank you!