USING SMARTPHONES AND TABLETS FOR THROTTLES AND PANELS WITH JMRI

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Outline

- Why use Smartphones and Tablets
- Basic Requirements
- Throttles
- Panels
- Operations
- JMRI setup for WiFi and Web
- Frame Server vs Client Panel
- What's next in EngineDriver
- Optional: Networking basics

About Robin Becker

- Junior developer of EngineDriver
- Developer of Quad-LN: *LocoNet® stationary decoder*
- JMRI user and contributor since early days
- N-scale modeler
- *25 years on SD&A Railway including 13 years as Engineer*
- Career in microprocessor-based instrumentation
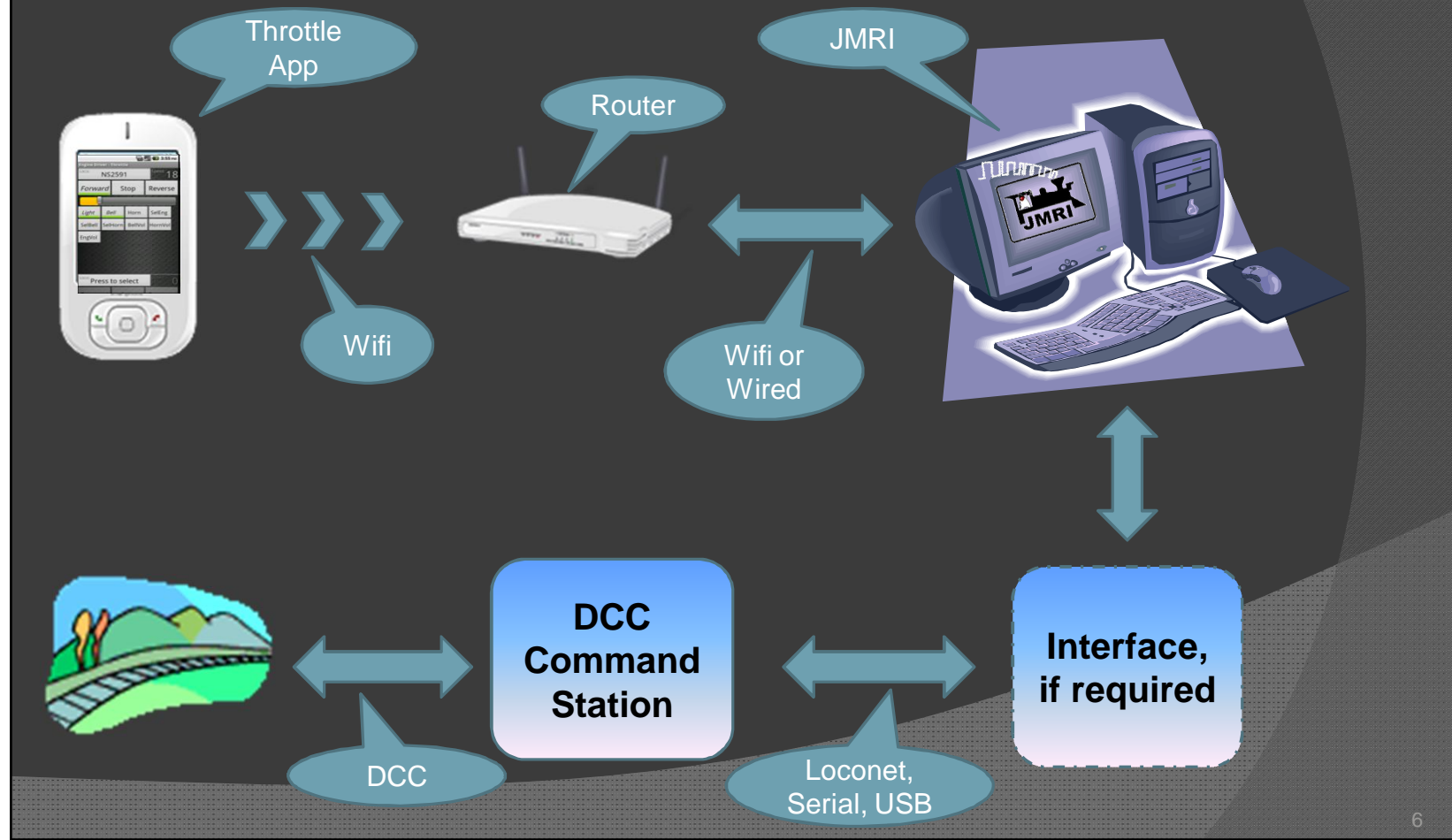- Principal of N3IX Engineering

Who are you?

- Use DCC?
- Use JMRI DecoderPro to program decoders?
- Use JMRI Panels? Created?
- Use JMRI Operations?
- EngineDriver or WiThrottle apps?
- InControl Web throttle?
- Accessed JMRI windows via browser?
- Controlled turnouts or routes via ED or WiT?
- Used web features of ED or WiT apps?
- Know frameserver vs. panelserver?

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Why Smartphone or Tablet?

- Replace expensive hardware throttles with existing smartphones

- Better user interface. Lower learning curve for new (younger) operators

- Replace physical panels with flexible software

- Replace operations paperwork with software (can update real-time)

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Basic Setup

- Computer running JMRI
- Connection to layout
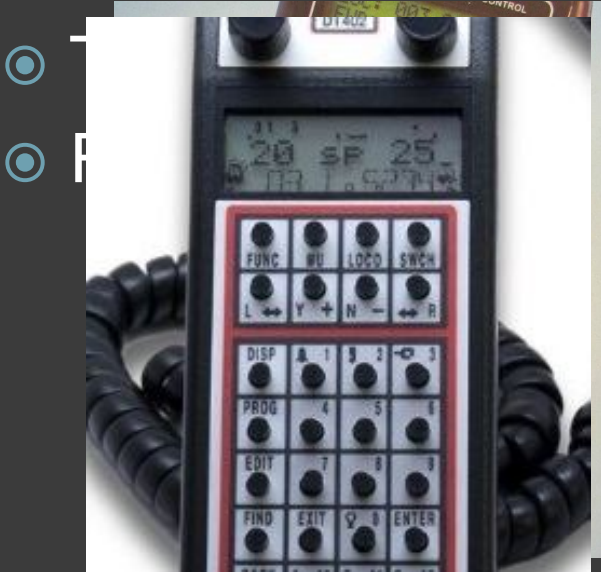- Local wireless network – WiFi
- WiFi-enabled device(s)

Throttle App

JMRI

Router

Wifi

Wifi or Wired

DCC Command Station

Interface, if required

DCC

Loconet, Serial, USB

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Faceless. Huh?

Throttles

- Control engines - the starting point
- End the "what address is that loco" era
- End the "which function does what" era

Available Throttles

- Android - Engine Driver
- iPhone, etc. – WiThrottle app
  Dedicated applications
  Connect to the JMRI "WiThrottle" server

- Web Browser – InControl web app
  Uses built-in browser instead of separate application
  Connects to the JMRI "Web" Server

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EngineDriver Throttle Screen

EngineDriver Turnouts and Routes
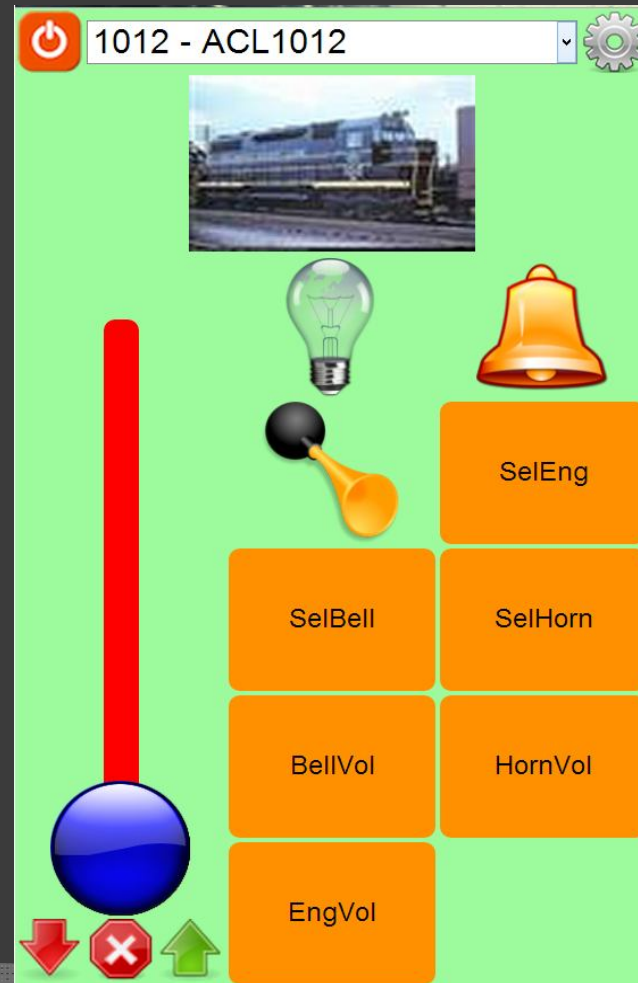
EngineDriver Select Loco from Roster

WiThrottle Throttle Screen
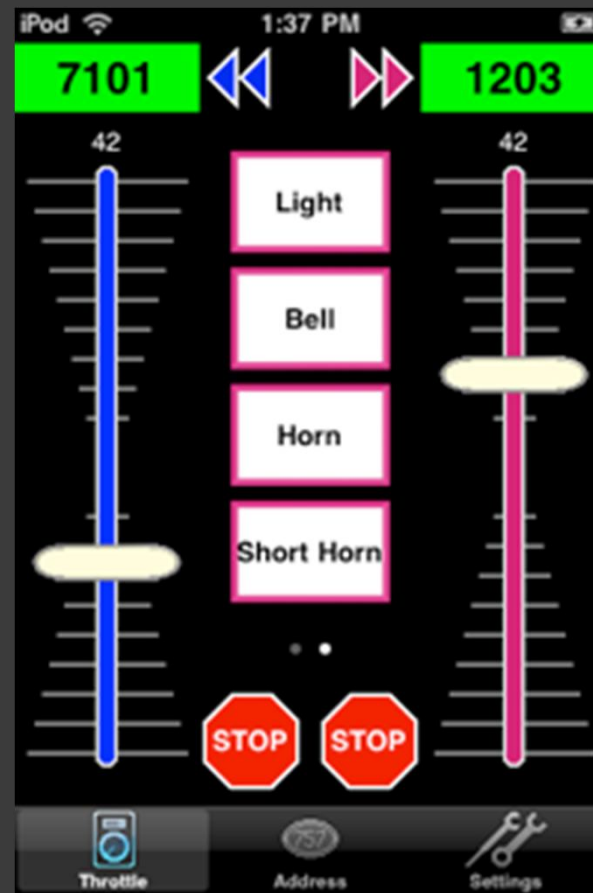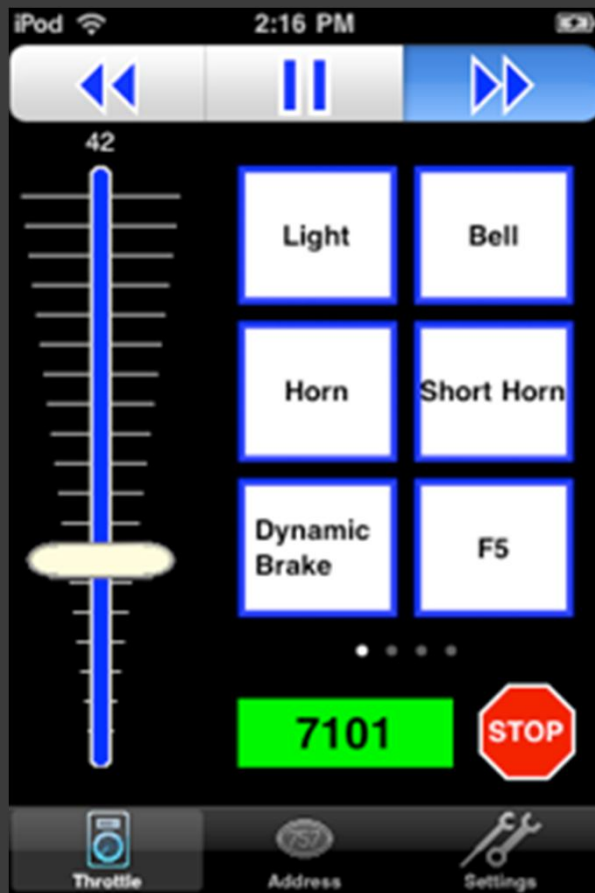
WiThrottle Select Loco from Roster

InControl WebThrottle

Panels

- Use web browser
- Connect to the JMRI "Web" Server

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JMRI Web Server Home Page

Steve Todd's Layout Panel
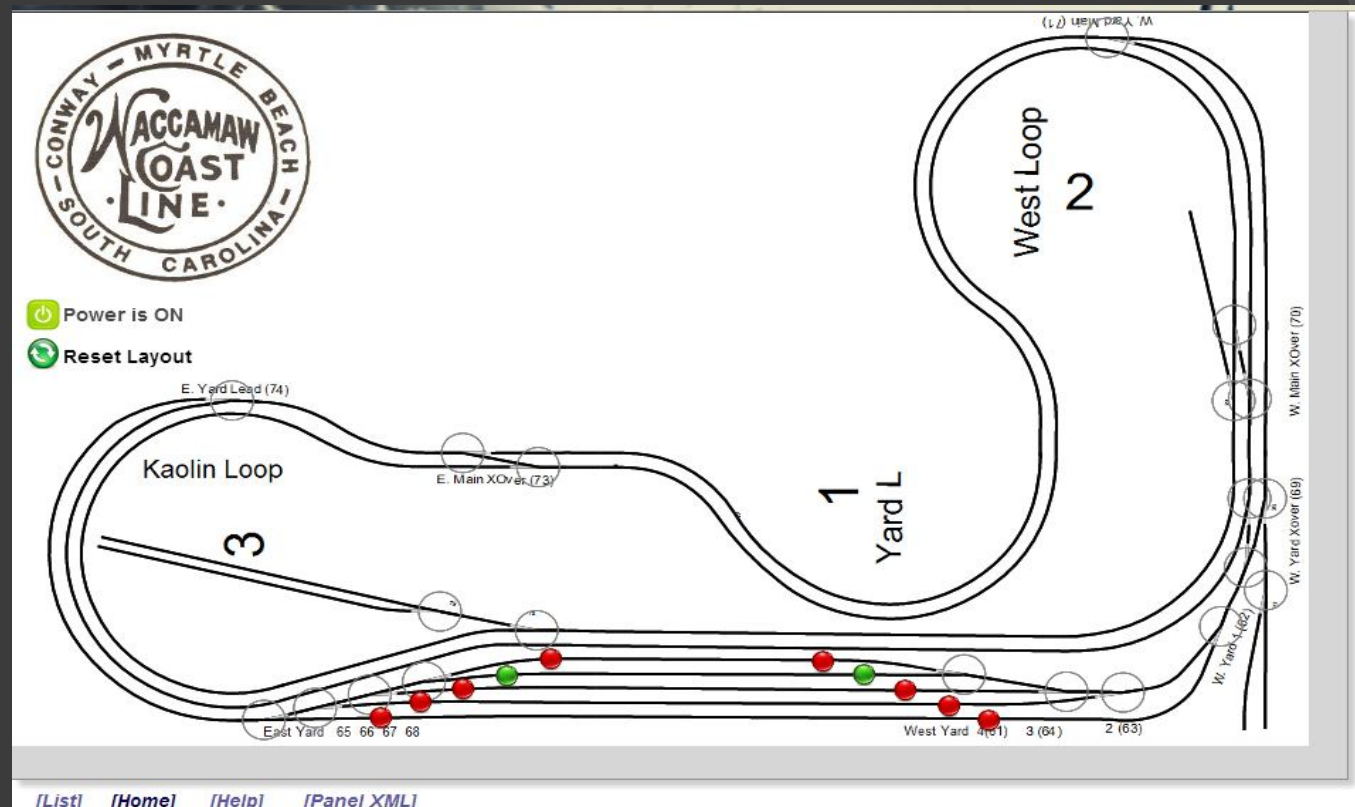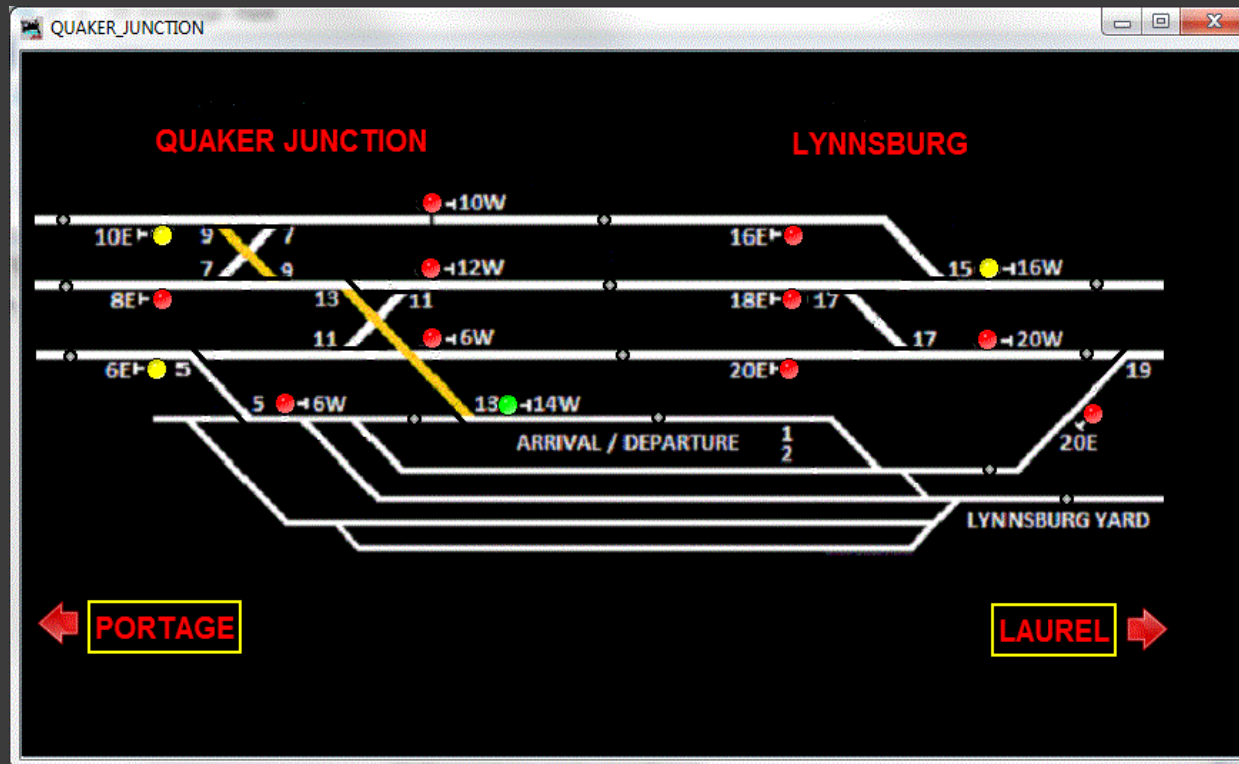

Note larger circles, routes, power. Fits nicely on tablets.

Jon Judd's Colorado Joint Line
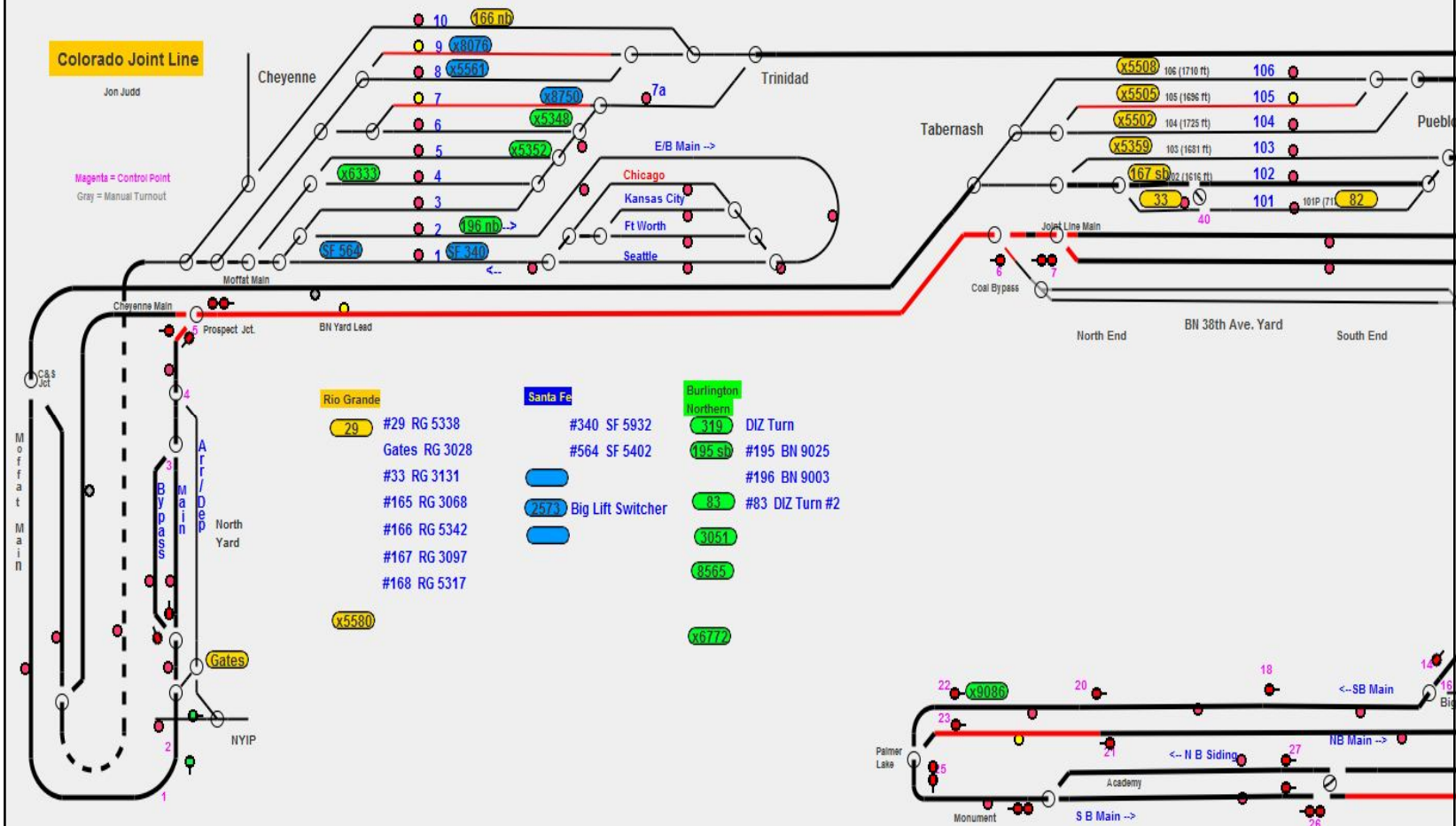
Signals, Occupancy detectors, LocoIcons, really needs a large monitor

Tablet-Sized Panel using new Link feature to navigate the layout.

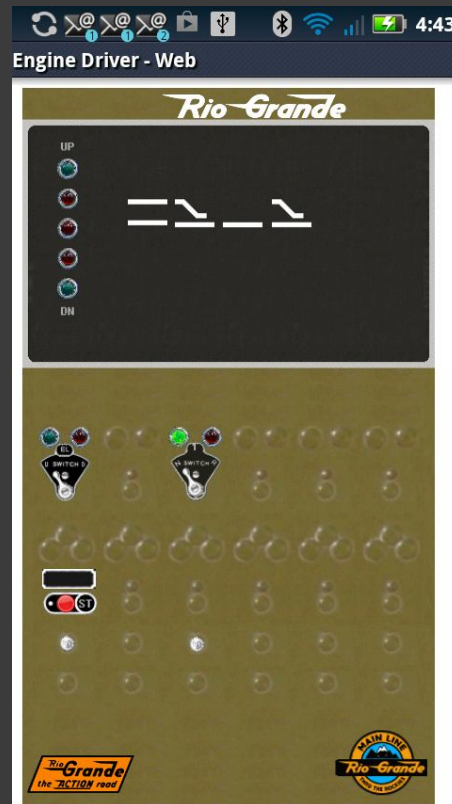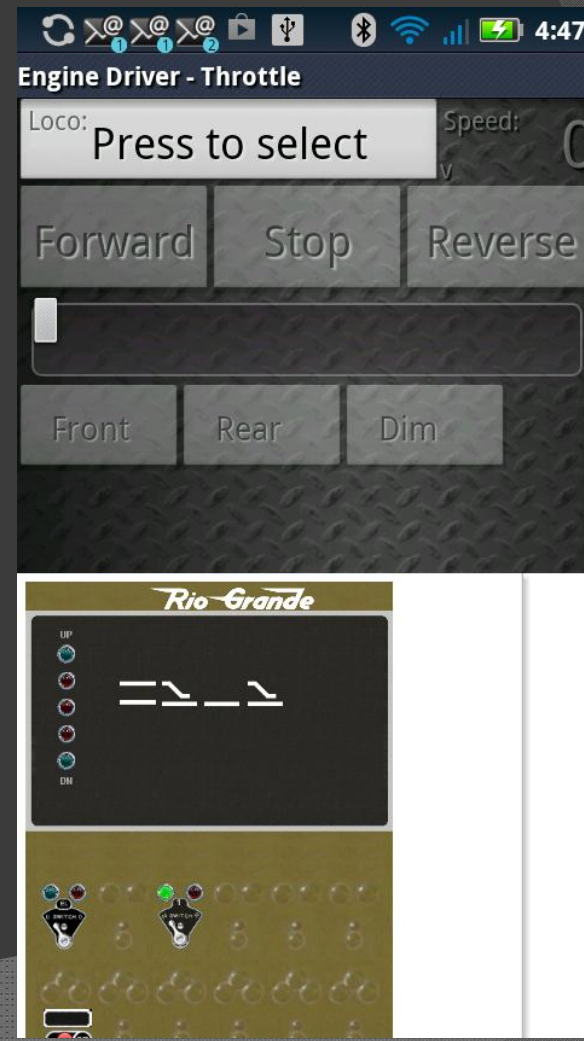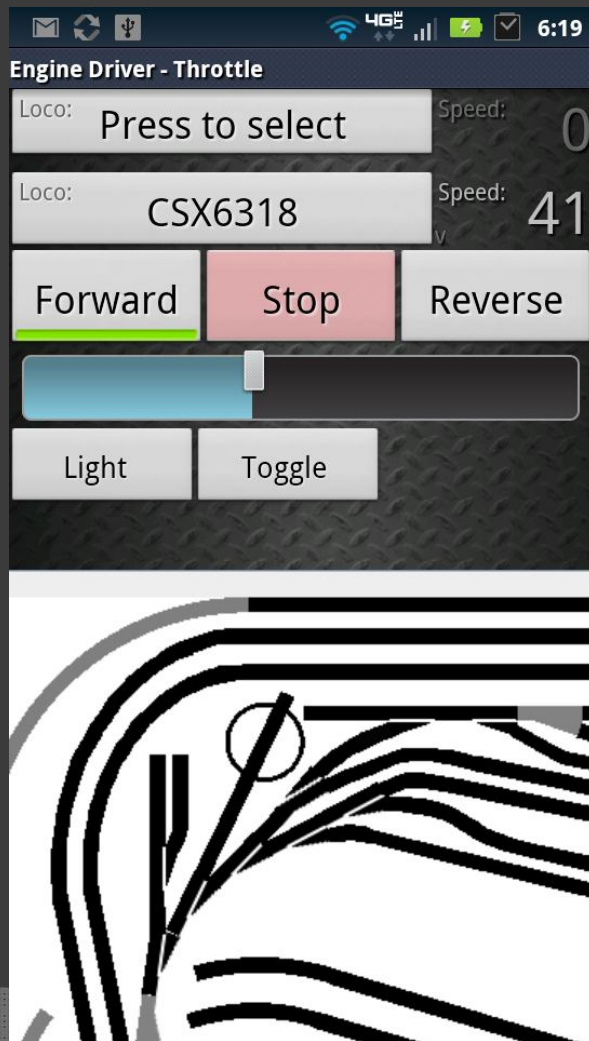http://quaker-valley.com/CTC/Tablet.html

Smartphone panels too! My Elevator Control Panel on EngineDriver Web screen
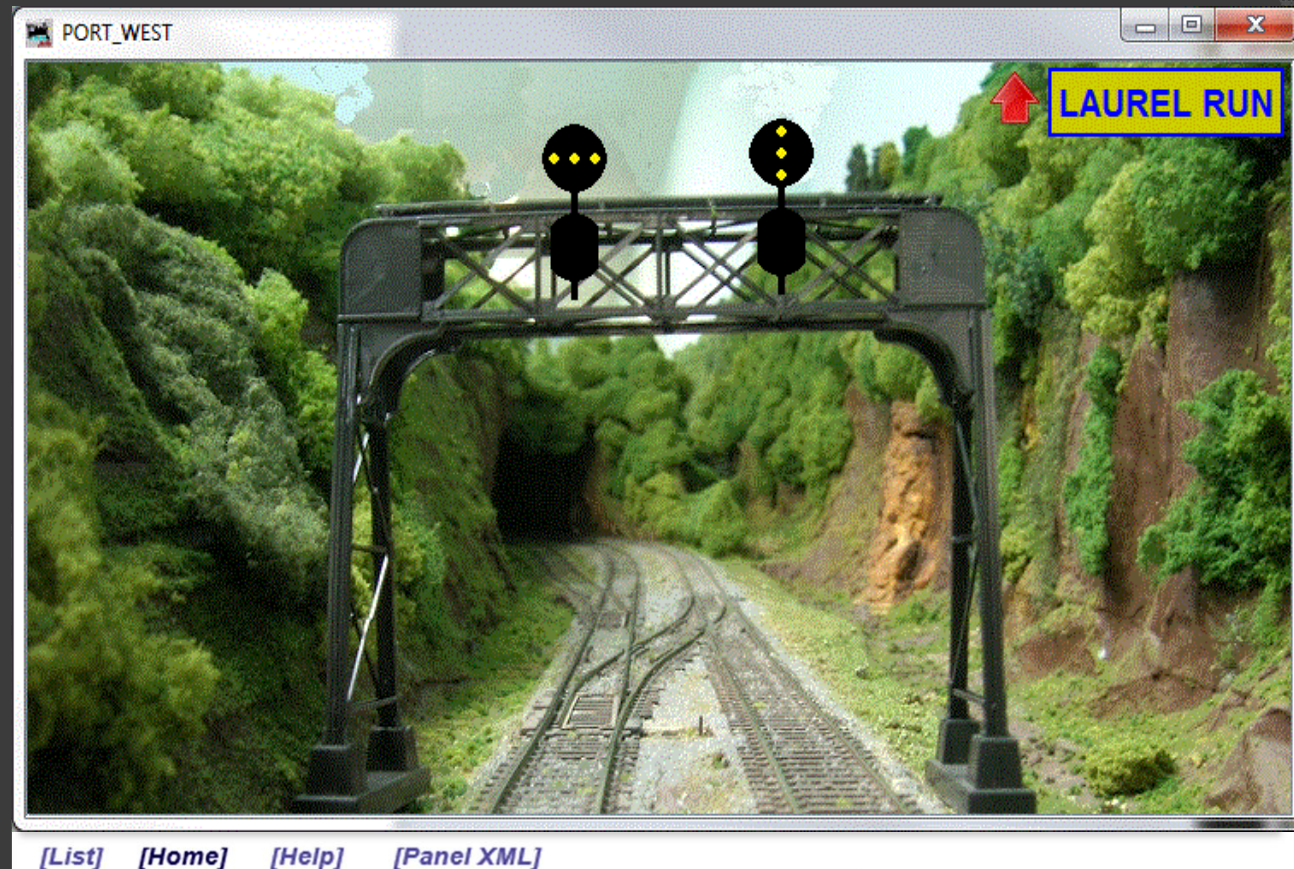
CTC type panel

Fits nicely on smartphone.

EngineDriver Throttle with Panel

"Engineer view"

Signals are live, arrows open the "next" panel

Operations

- Use JMRI Operations capability
- Eliminate paper

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Train Manifest as web page

Train Manifest | LS Lakeview - Susanville | Waccamaw Coast Line

LS Lakeview - Susanville - *Staging to staging*

- ⊞ Lakeview (07:20) 15 pickups
- • Farmington (07:24) No work
- • Hillsboro (07:28) No work
- ⊞ Danville (07:32) 1 setouts
- ⊟ Port Arthur (07:39) 3 pickups 2 setouts
    - ✔ Set out PRR 81368 Boxcar 40' Tuscan E<mpty> to #153 Zane Mercantile
    - Set out N&W 54818 Boxcar 50' Tuscan L<oad> to #427 Majestic HW & Feed
    - ✔ Pick up G&F 442 Boxcar 50' Jade Green L<oad> from #153 Zane Mercantile
    - Pick up GRCX 5020 TankOil 33' Blue E<mpty> from #163 Siding
    - Pick up SR 40204 Boxcar 50' Tuscan L<oad> from #47 Farmer's Yard
- ⊞ Bakersfield (07:58) 3 pickups 3 setouts
- ⊞ Fremont (08:20) 3 setouts
- ⊞ Susanville (08:33) 12 setouts

[Trains] [Home] [Help]

Locations expand, click to mark complete

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Conductor Window as web page
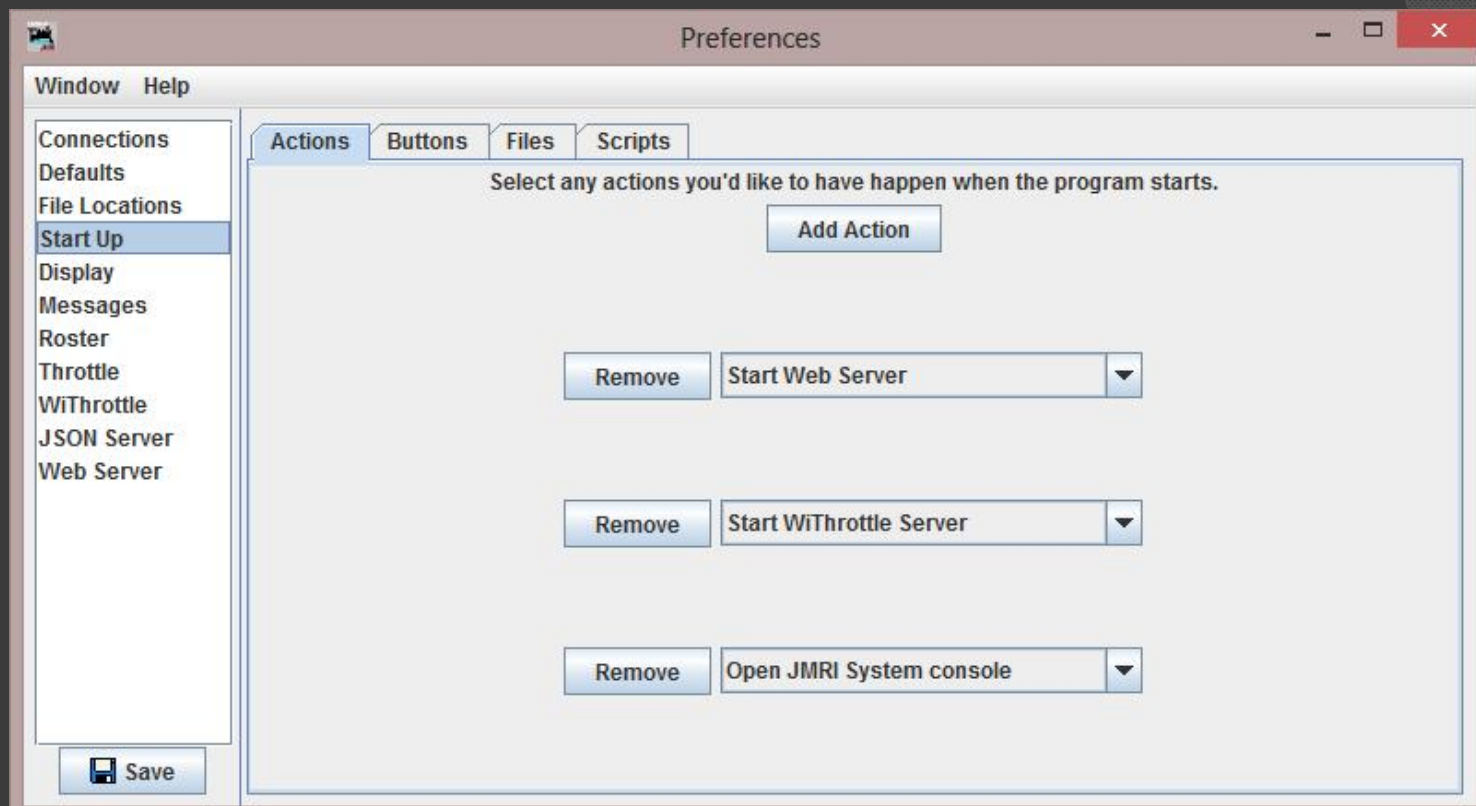
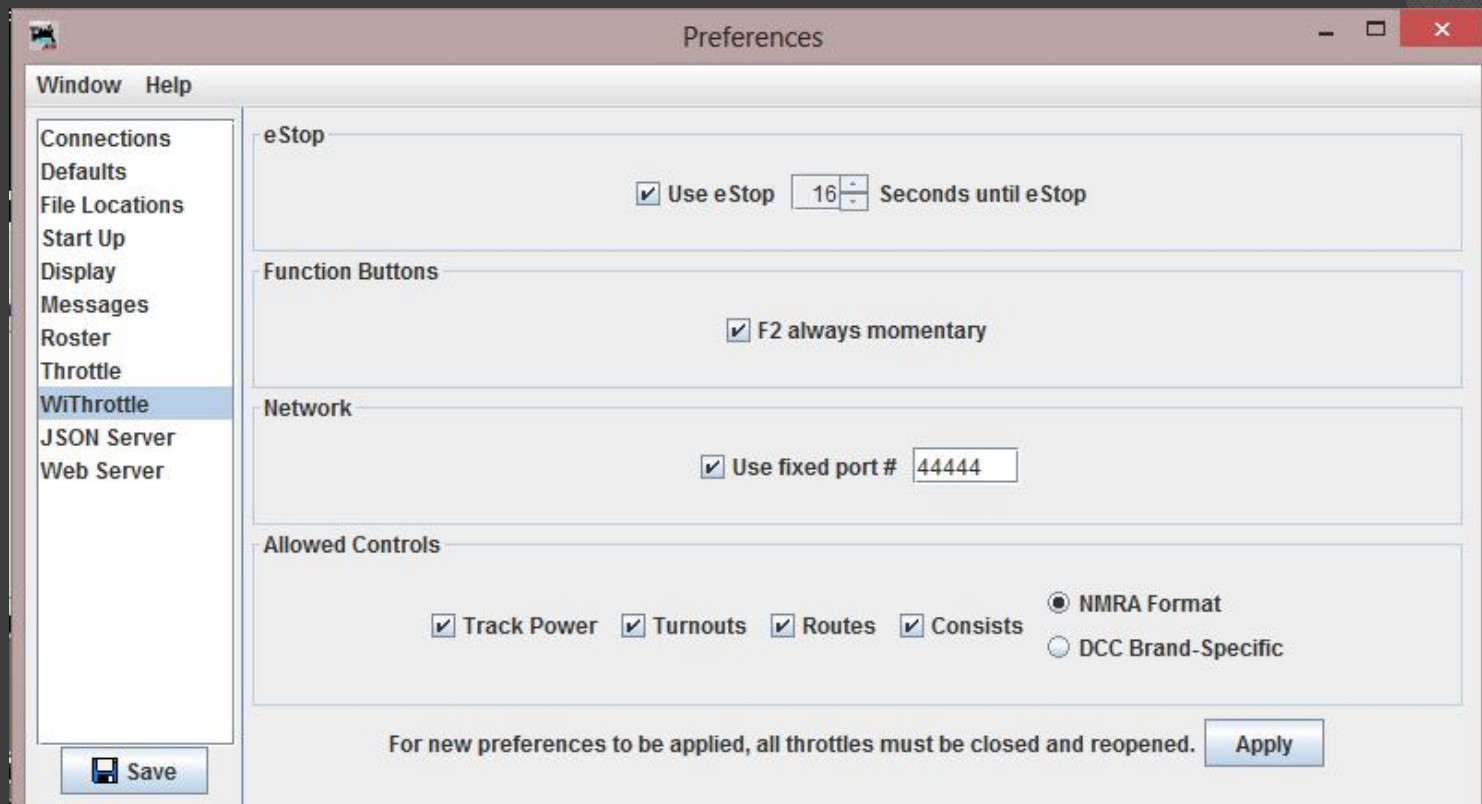# Configuring JMRI

- WiThrottle Server
- Web Server

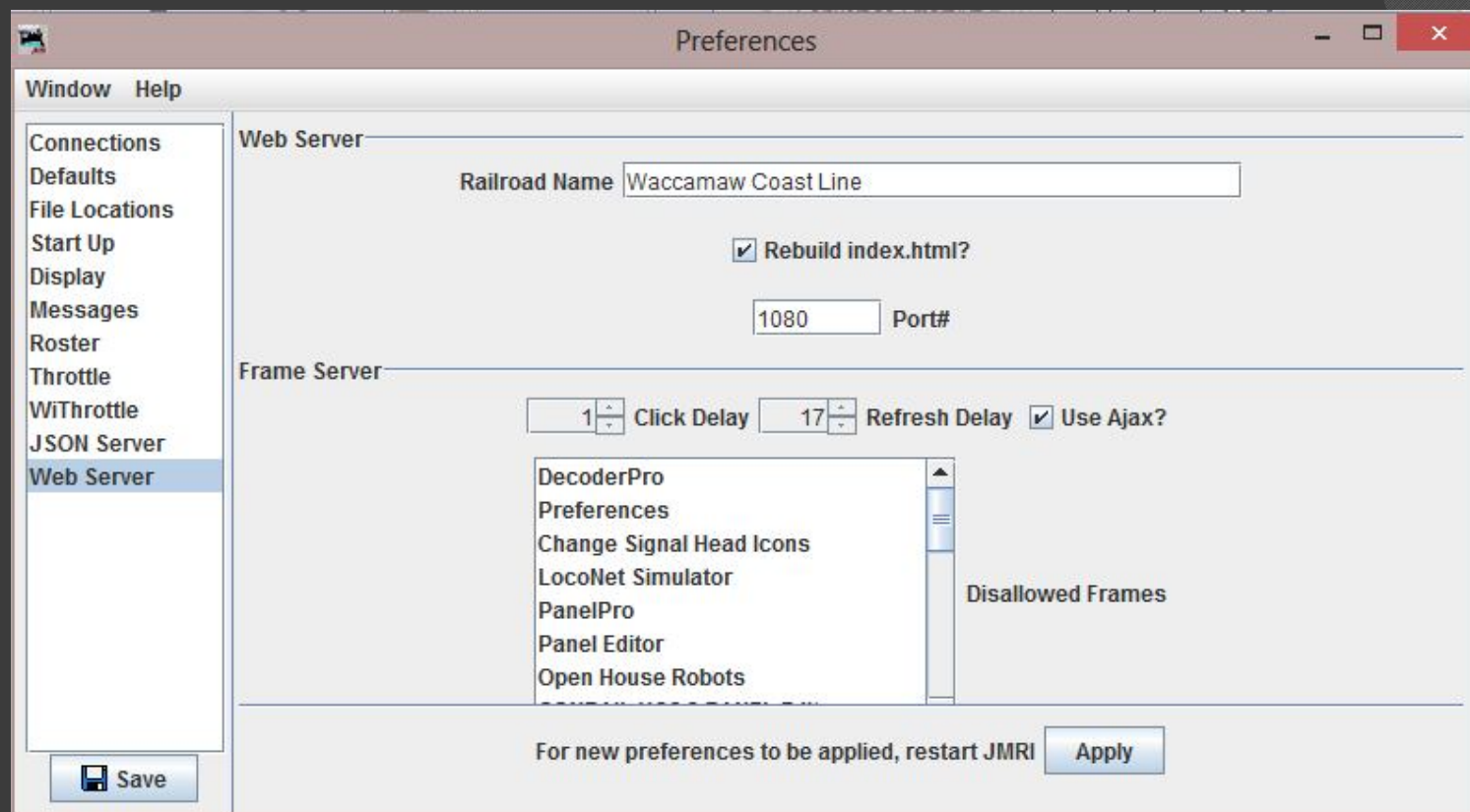# Starting Servers

WiThrottle Server Preferences

Web Server Preferences

Cutting Edge: Frame Server vs. Client Panel

FrameServer vs. Client Panel

"Open Windows" = frameserver

- Works with most JMRI windows
- Periodic refresh
- Sends image of entire window
- Mouse clicks only (no text entry, sliders, etc.)

"Client-side Panels" = showPanel.js

- Panels only
- Sends widget states only (much faster)
- Direct widget refresh on changes
- "knows" about the widgets (e.g. Links, text entry, etc.)

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# Live Demo

- Frame Server
- Client Panel
- Web Throttle

EngineDriver Statistics

- 4,000+ users with 11,000+ downloads
- Hundreds of different devices
- Dozens of countries

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EngineDriver To-Do List

- Multiple throttle layouts (switcher, vertical)
- Flexible layout for larger pads
- Show panel based on train location
- Consist direction, write CVs
- Speed matching app

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Local Network (LAN)
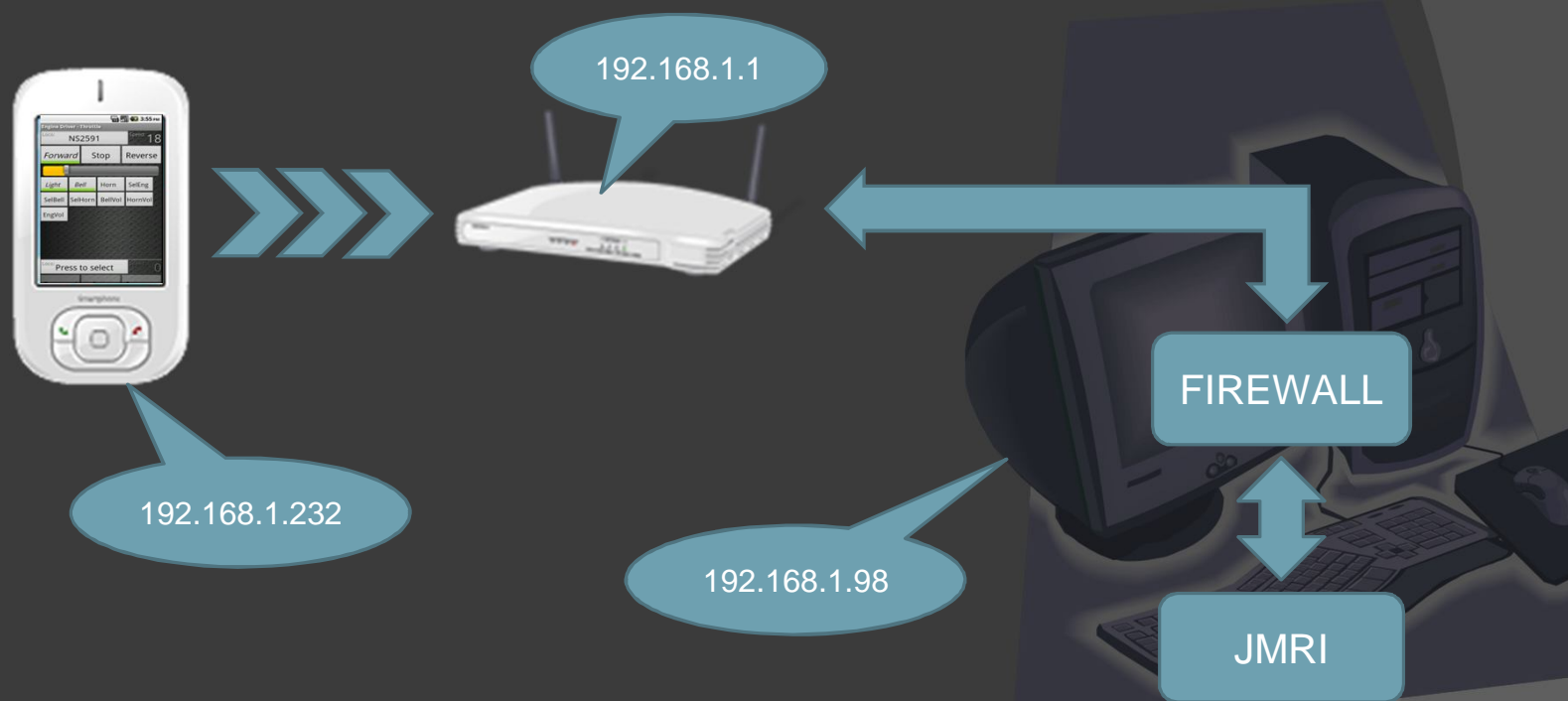
RPi -> PR3 -> DB150 -> layout

More Information

- EngineDriver: Google Play Store or EngineDriver.RRClubs.org

- WiThrottle: iTunes or WiThrottle.com

- JMRI: JMRI.org

- Support: groups.yahoo.com/group/jmriusers/

- Email robin@n3ix.com

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