

“FCC Licensing 102”
Licensing SCADA Systems

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Introduction



- Jack Richards, Partner
- Greg Kunkle, Associate
- Elizabeth Buckley,
Telecommunications Licensing
Manager

Topics



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- Industry Issues
 - Initial Considerations
 - Licensed SCADA Options
 - General Licensing Requirements

Industry Issues



- Importance to industry
- Increase automation and efficiency
- Value of Spectrum/Options
- Licensed vs. Unlicensed
- Enforcement

Background



- SCADA – Supervisory Control And Data Acquisition
- MAS – Multiple Address System
- Part 101, Part 90, Part 15

Initial Considerations



- Area of Coverage
- Existing Equipment
- Location
- Existing Infrastructure
- Power Limitations
- Number of Remotes

Licensed SCADA Options



- 941/932 MHz; 952/928 MHz
- 450-470 MHz (primary)
- 150-170 MHz; 450-470 MHz (secondary)
- 1.4 GHz
- Auctioned
- 800/900 MHz

941/932 MHz, 952/928 MHz



- Rule Section 101.147
- Primary
- Area of Protection
 - 145 km radius – Fixed to Fixed
 - 70 km radius – Fixed to Mobile
 - 81 km radius – Mobile to Mobile
- Antenna Height Limitations
 - None

941/932 MHz, 952/928 MHz



- Power Limitations
 - 5 Watts ERP - Master
 - 47 Watts EIRP - Remotes
- Bandwidth
 - 25 kHz (grandfathered)
 - 12.5 kHz
 - Can combine up to 50 kHz w/o justification

941/932 MHz, 952/928 MHz



- Engineering Required
 - Supplemental Showing
 - MAS Certification
- Processing Time
- 959/928 MHz channel pairs are grandfathered – modifications are limited
- 956 MHz Simplex

450-470 MHz (primary)



- Rule Section 90.267(d)
- Primary
- Area of Protection
 - 32 km radius – traditional
 - Larger radius with justification
- Antenna Height Limitations
 - 7 Meters/20 Feet

450-470 MHz (primary)



- Power Limitations
 - 6 Watts ERP - Master
 - 2 Watts ERP - Remotes
- Bandwidth
 - 12.5 kHz
 - 6.25 kHz

450-470 MHz (primary)



- Engineering Required
 - Frequency Coordinator Certification
- Processing Time
- FXOT Waiver

150-170 MHz; 450-470 MHz (secondary)



- Rule Section 90.35
- Secondary
- Area of Protection
 - 32 km radius – traditional
 - Larger radius with justification
- Antenna Height Limitations
 - None

150-170 MHz; 450-470 MHz (secondary)



- Power Limitations

- Consistent with safe harbor table
 - Not to exceed 500 Watts

- Bandwidth

- 25 kHz
- 12.5 kHz
- 6.25 kHz

150-170 MHz; 450-470 MHz (secondary)



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- Engineering Required
 - Frequency Coordinator Certification
 - Processing Time
 - FXOT Waiver

1.4 GHz



- Rule Section 90.259
 - 1427-1432 MHz
- Primary
 - Depending on location may be secondary to Wireless Medical Telemetry Service
- Area of Protection
- Antenna Height Limitations
 - None

1.4 GHz



- Power Limitations

- Depends on location and frequency
- Fixed - .611 – 61.1 Watts ERP
- Mobile – .015 - .611 Watts ERP
- Temporary Fixed - .611 Watts ERP

- Bandwidth

- 12.5 kHz
- Can combine up to 50 kHz w/o justification

1.4 GHz



- Engineering Required
 - Frequency Coordinator Certification
- Processing Time
- WMTS Interference Concerns

Auctioned



- Bands
 - 941/932 MHz
 - 959/928 MHz
 - AMTS/220 MHz
- Construction Benchmarks
- Spectrum Leasing
 - Form 608

800/900 MHz



- Permissible for licensees with exclusive voice use
 - Loading
- Secondary
- Freeze
 - 900 MHz
 - New; Modifications allowed
 - 800 MHz
 - Varies on location/pre-rebanding frequency availability

Construction Requirements



- 18-Month Construction Window
 - 941/932 MHz; 952/928 MHz
- 12-Month Construction Window
 - 450-470 MHz (primary)
 - 150-170 MHz; 450-470 MHz (secondary)
 - 1.4 GHz
 - 800/900 MHz
 - Slow Growth Available
- 5-year, 10-year const. benchmarks
 - Auctioned

License Renewals



- 90-day filing window
- Can combine all renewals in same year
- License Term

FAA/ASR



FAA Form 7460-1

➤ 2-4 weeks processing time

- FCC Form 854 – secures 7 digit ASR No.
- FAA Form 7460-2
- FAA uses feet while the FCC uses meters!

Administrative Updates



- Used to keep information on licenses current
- Contact information particularly important
- If administrative update changes the licensee name, FRN and related Antenna Structure Registrations must be updated
- Superseding License will be issued upon FCC completion of Administrative Update

STA/CTA



- Conditional Temporary Authority
 - Does not apply
- Special Temporary Authority
 - Use to correct violation going forward or for immediate need
 - Good for up to 180 days

- Questions?

Thank You!!!



- Jack Richards
 - 202-434-4210; richards@khlaw.com
- Greg Kunkle
 - 202-434-4178; kunkle@khlaw.com
- Elizabeth Buckley
 - 202-434-4282; buckley@khlaw.com