



FAA UAS SYMPOSIUM

A Beginner's Guide to Spectrum Policy



Federal Aviation
Administration



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Two basic types of Spectrum



- Licensed Spectrum
 - Primary allocation
 - Operation must be in accordance with the table of allocations 47.CFR.300.1 (However additions may be considered)
 - Secondary allocation
 - Must not cause interference to primary
 - Must accept interference from primary
- Unlicensed Spectrum
 - Not operation without a license
 - Limited bands
 - Competition with other uses
 - Subject to FCC Part 15 rules
 - Must cease immediately if interference is caused to licensed users
 - Must expect interference and loss of operation
 - Equipment must meet FCC Part 15 rules
 - Limited in range
 - Limited in power
 - Limited in antenna
- Experimental license is not for operation, it is for proof of concept by the equipment manufacturer. An experimental license is generally not an indication that an operational license would be considered or even granted.
- An experimental license is similar to FCC part 15 operations and subject to the same conditions.

Spectrum for UAS operations that interact with the National Airspace System

Safety of Life operation C&CNP



- Spectrum utilized must be Licensed Spectrum with a Primary allocation
 - Spectrum will most likely have an availability requirement say 3 or 4 9's
- Spectrum does not have to be assigned for aviation use
- Operator must obtain a full license to operate that spectrum
- Experimental licenses will not be permitted and are never suitable for any life safety operation
- UAS Spectrum
 - 5030 to 5091MHz
 - Managed by FAA
 - Set aside for UAS National and International use WRC 2012 (FAA Spectrum started this effort in 2007!)
 - The use envisaged is for nationwide extended BVLOS operation national control system integrated with traffic flow management
 - Band plan under development to maximize use and minimize bandwidth
 - Lower 10MHz already being utilized for development with licenses approved by FAA
 - Feedback is that feasibility has been demonstrated well beyond initial expectations
 - FAA/Government unlikely to build Nationwide infrastructure
 - Infrastructure partnerships have been discussed at a very preliminary level