Technician License Course

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Chapter 7

Lesson Plan Module – 15

License Regulations and Privileges

Section 1 – License Rules

- Licensing authority for Amateur Radio
  - Federal Communications Commission
  - FCC rules published in Part 97 of Title 47 – Code of Federal Regulations.
  - Usually referred to as "Part 97"

Why Is There Ham Radio? (Part 97.1)

- Providing emergency communication capability.
- Advancement of the art and science of radio.
- Advance communication and technical skills of radio.
- Provide a trained reservoir of operators, technicians and electronics experts.
- Promote and enhance international goodwill.

Some Definitions

- Amateur Service – no pecuniary interest (private and personal, non commercial).
- Amateur Operator – the person holding authorization (license) to operate an Amateur Radio station.
- Amateur Station – equipment capable of transmitting on frequencies authorized for Amateur Service.

The Amateur License

- No age limit or citizenship restrictions.
  - –One exception – no foreign representatives
- License actually contains two parts.
  - –Operator license
  - –Station license (the call sign)
- Three levels of operator privileges: Technician, General, Amateur Extra.

Licensing Examinations

- Volunteer Examiners (VEs)
- Volunteer Examiner Coordinators (VECs)
- Preparation
  - –Study the content
  - –Question Pool

Licensing Examinations

- Taking the exam
  - –Proctored exam
  - –Multiple choice
  - –What the test session fee pays
    - –Laurel VEC is free

License Term and Renewal

- The license is free and good for 10 years.
  - –Renewable within 90 days of the expiration date.
- Some personal identification information is required.
  - –Tax ID (Social Security Number) once.
  - –Current Mailing Address.
  - –Federal Registration Number (FRN).

Responsibilities of Licensure

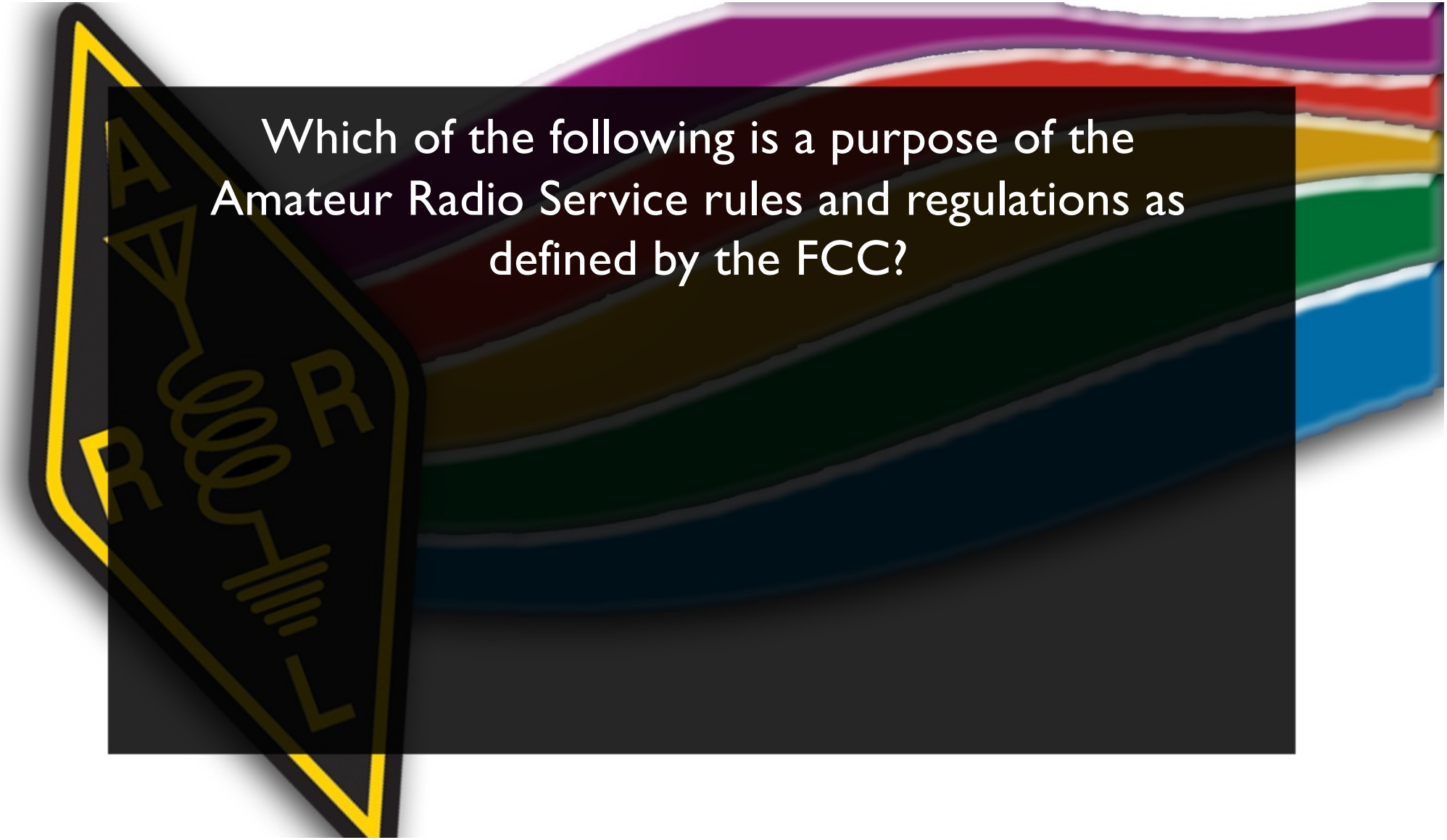
- Prevent unauthorized operation of your station.
- Provide personal information as required – keep a current mailing address on file.
- Make your station available for FCC inspection upon request.

FCC ULS Web Site

www.fcc.gov/uls

- Register for on-line access to your license information.
- Make changes to your address and other information.
- Renew your license.
- Search for other station information.

Practice Questions



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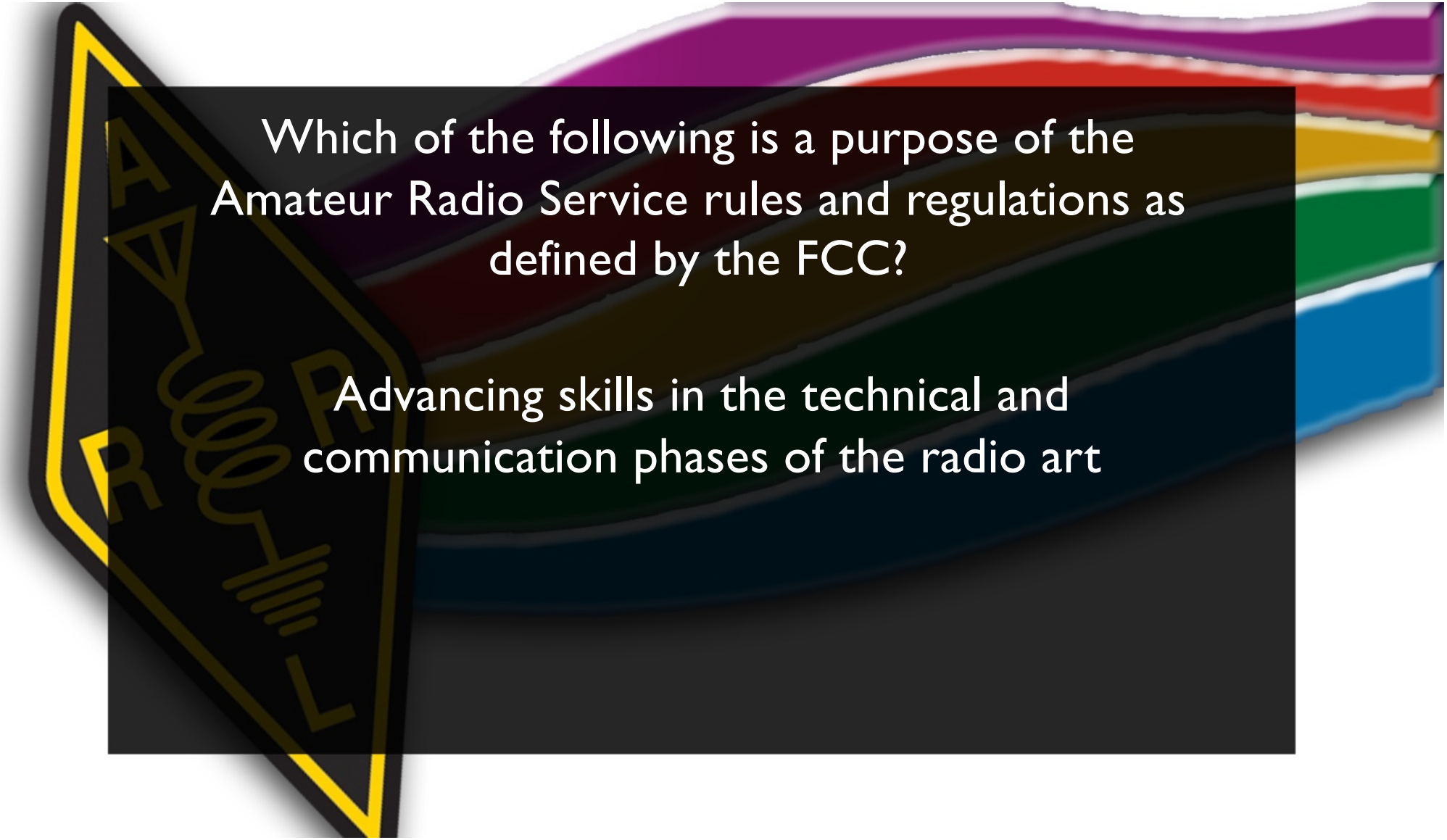
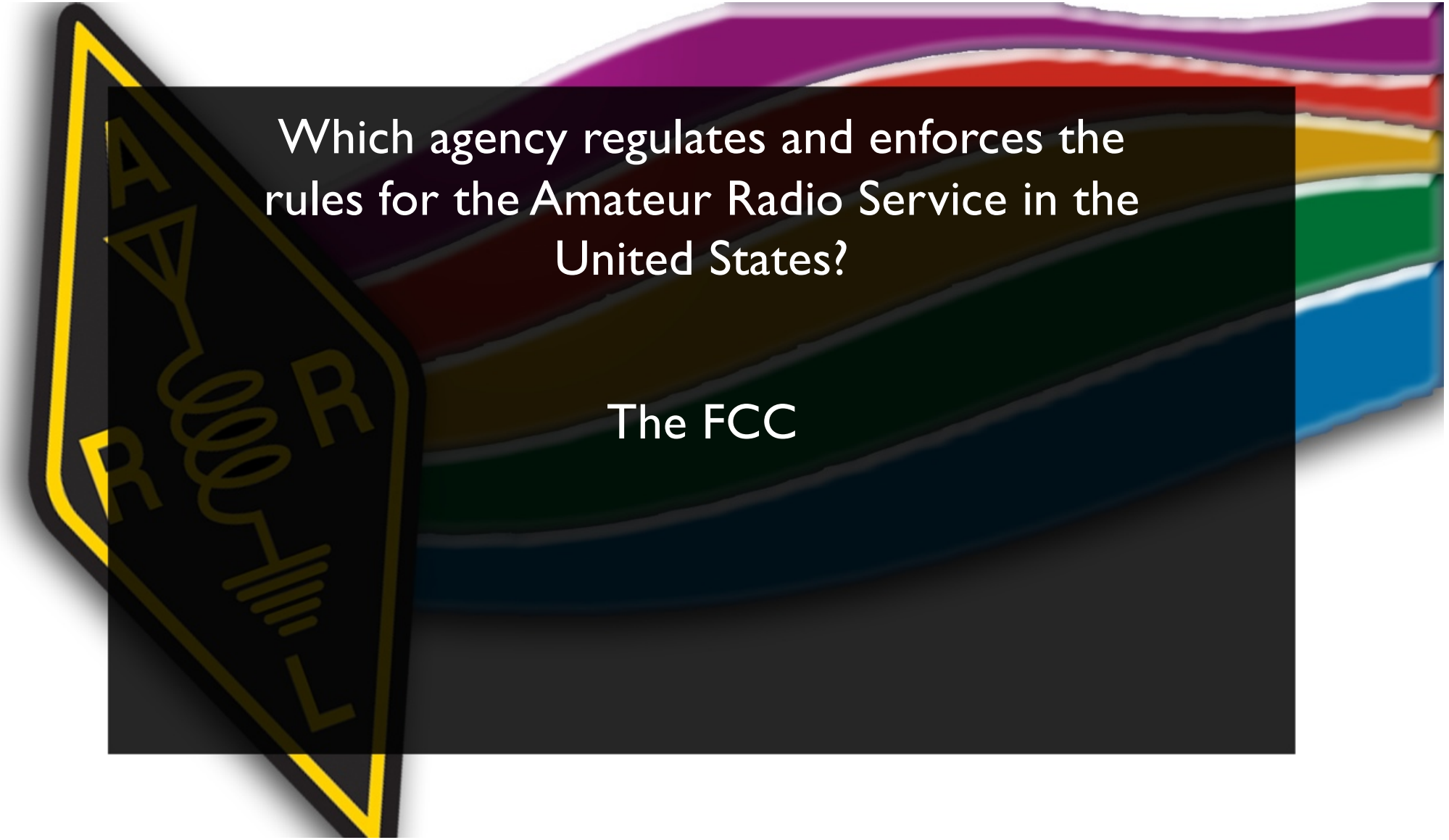


Which of the following is a purpose of the Amateur Radio Service rules and regulations as defined by the FCC?

Advancing skills in the technical and communication phases of the radio art


Which agency regulates and enforces the rules for the Amateur Radio Service in the United States?



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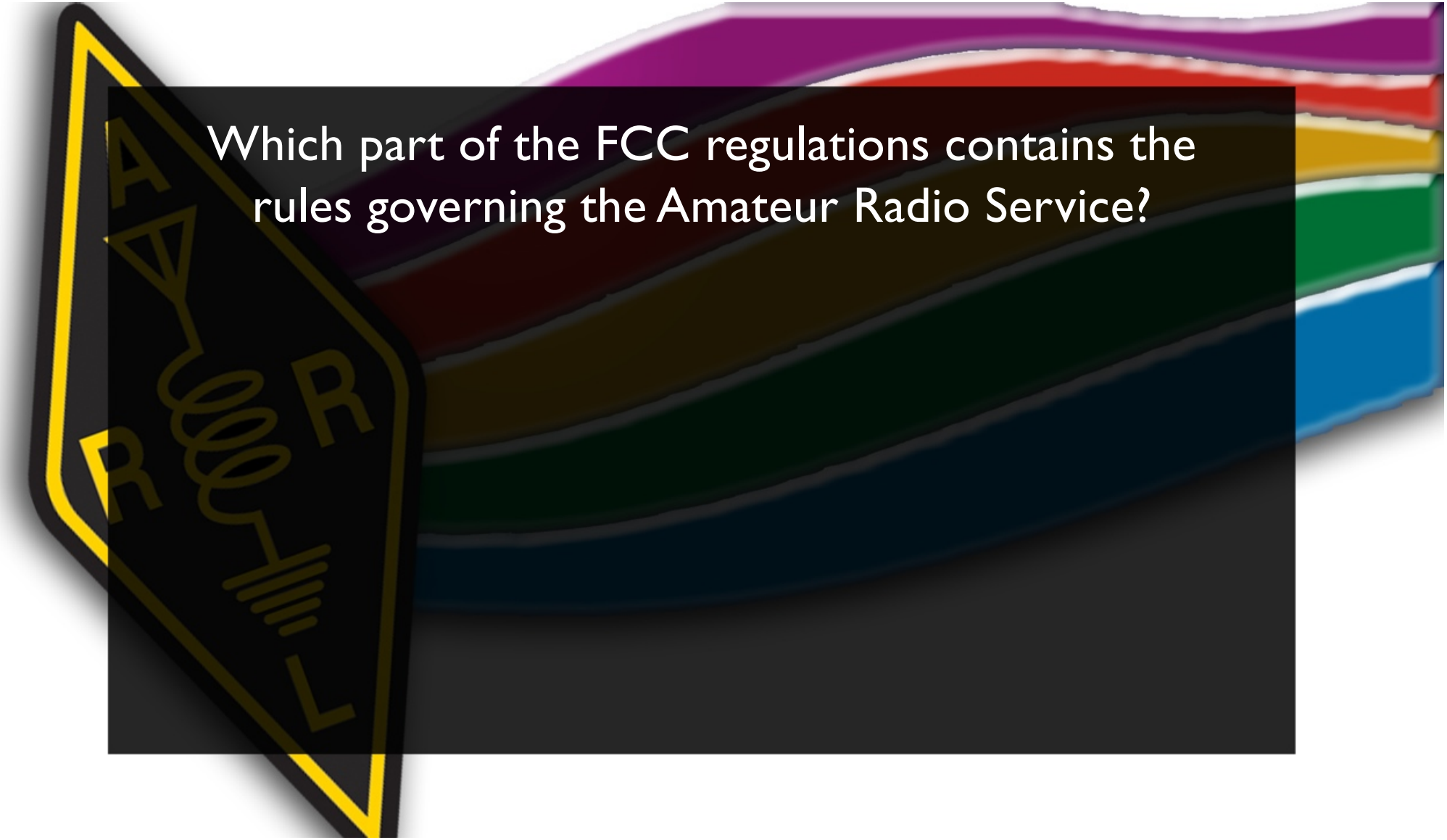
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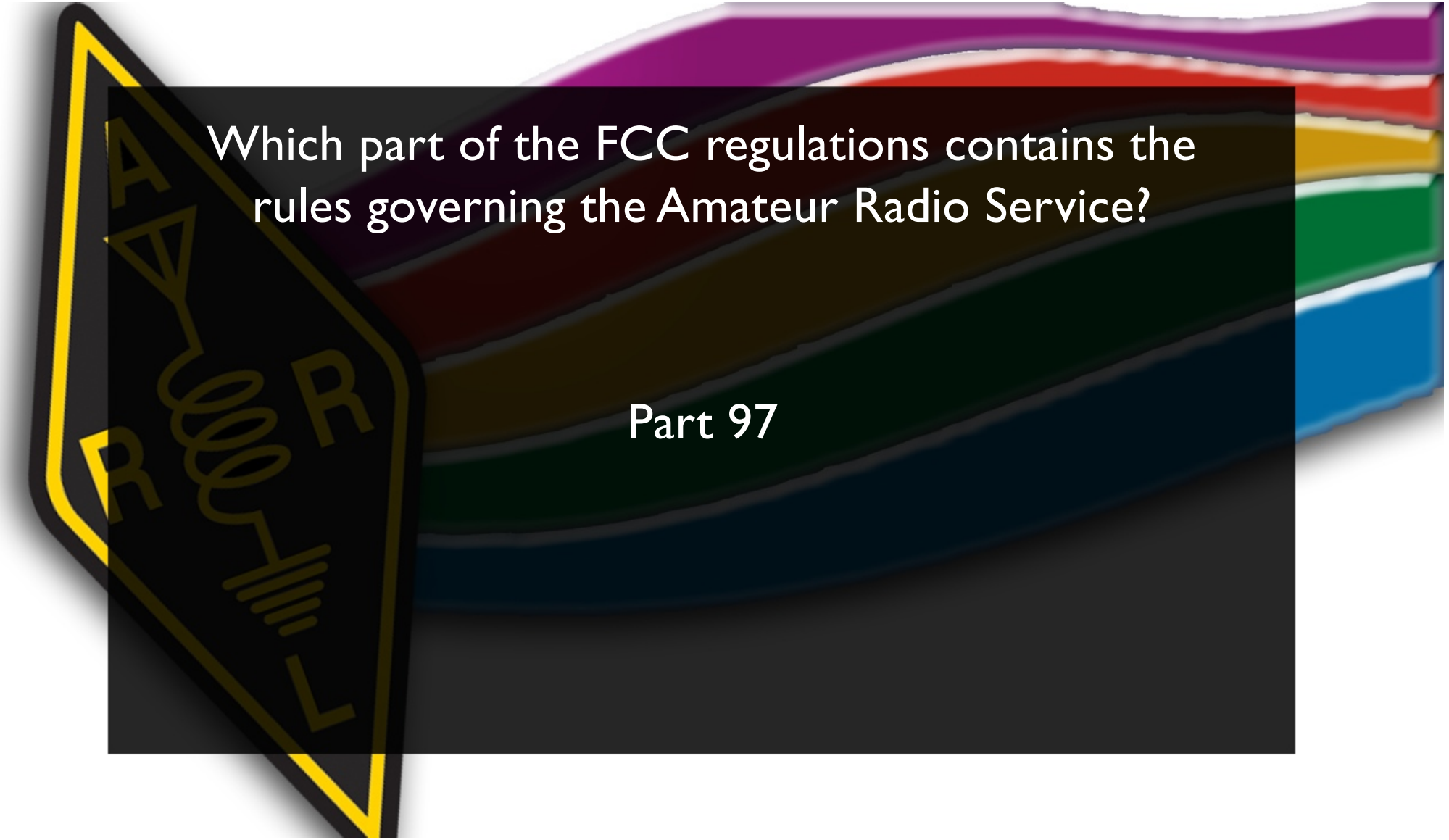
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Part 97


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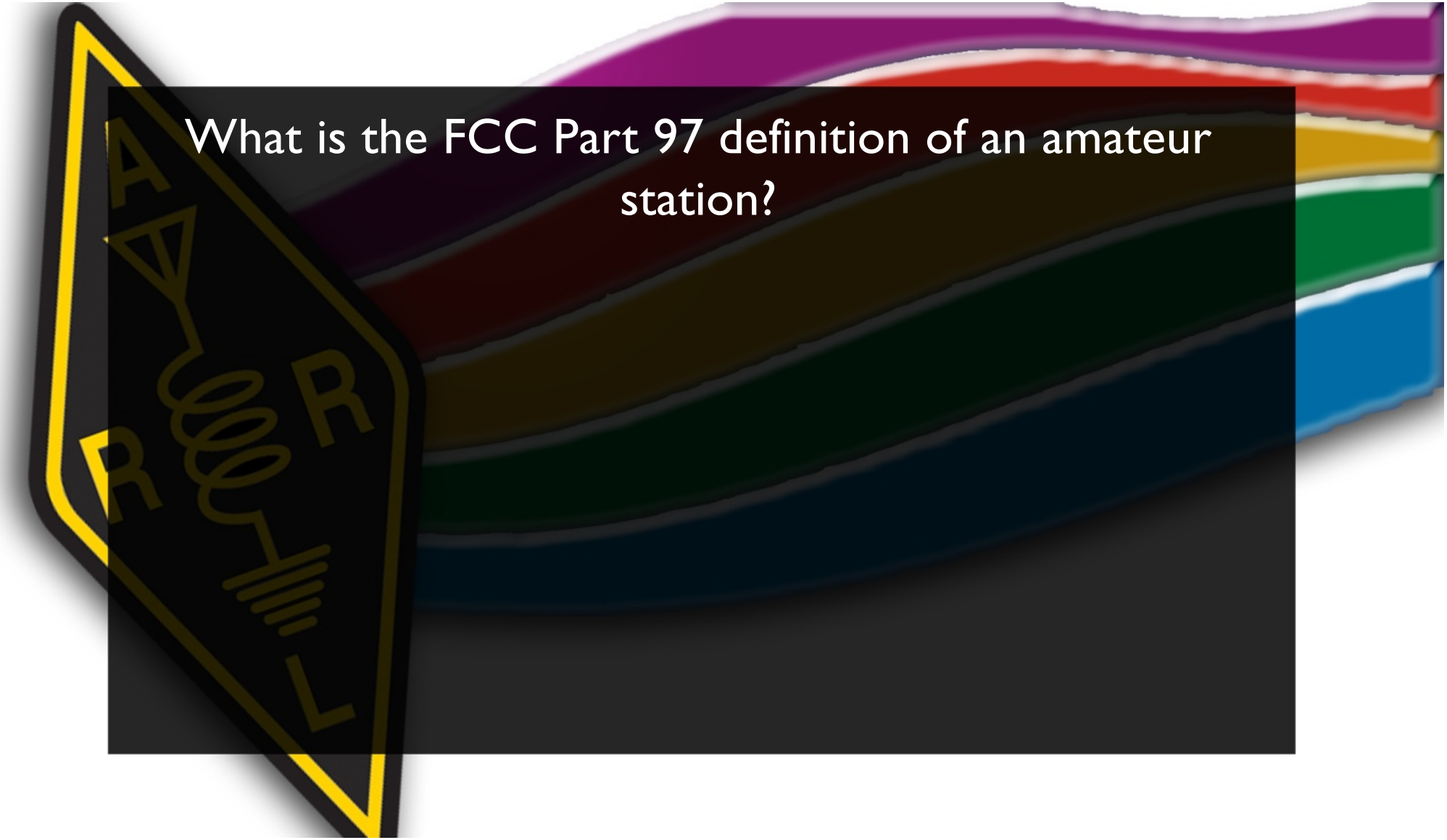

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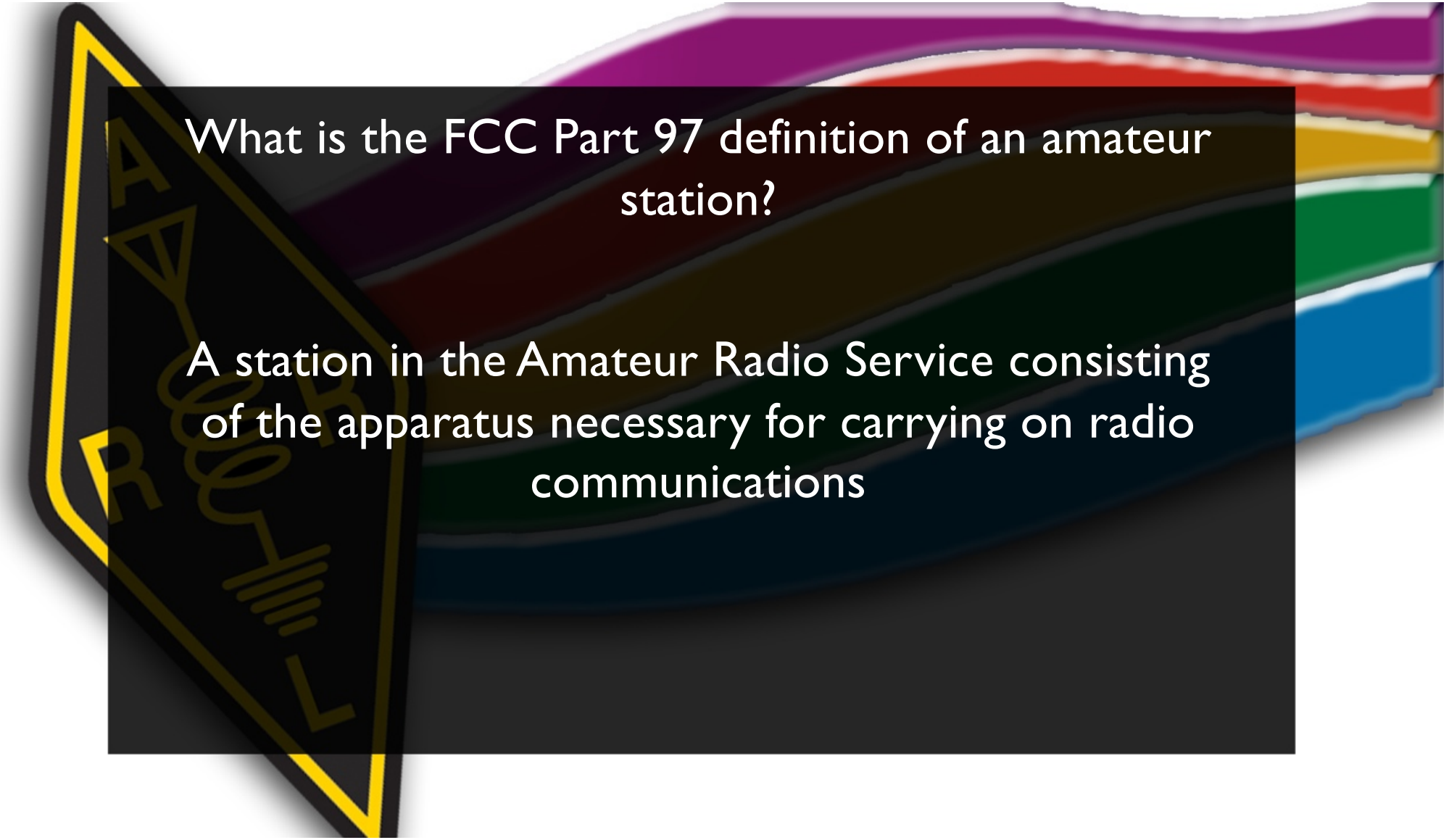
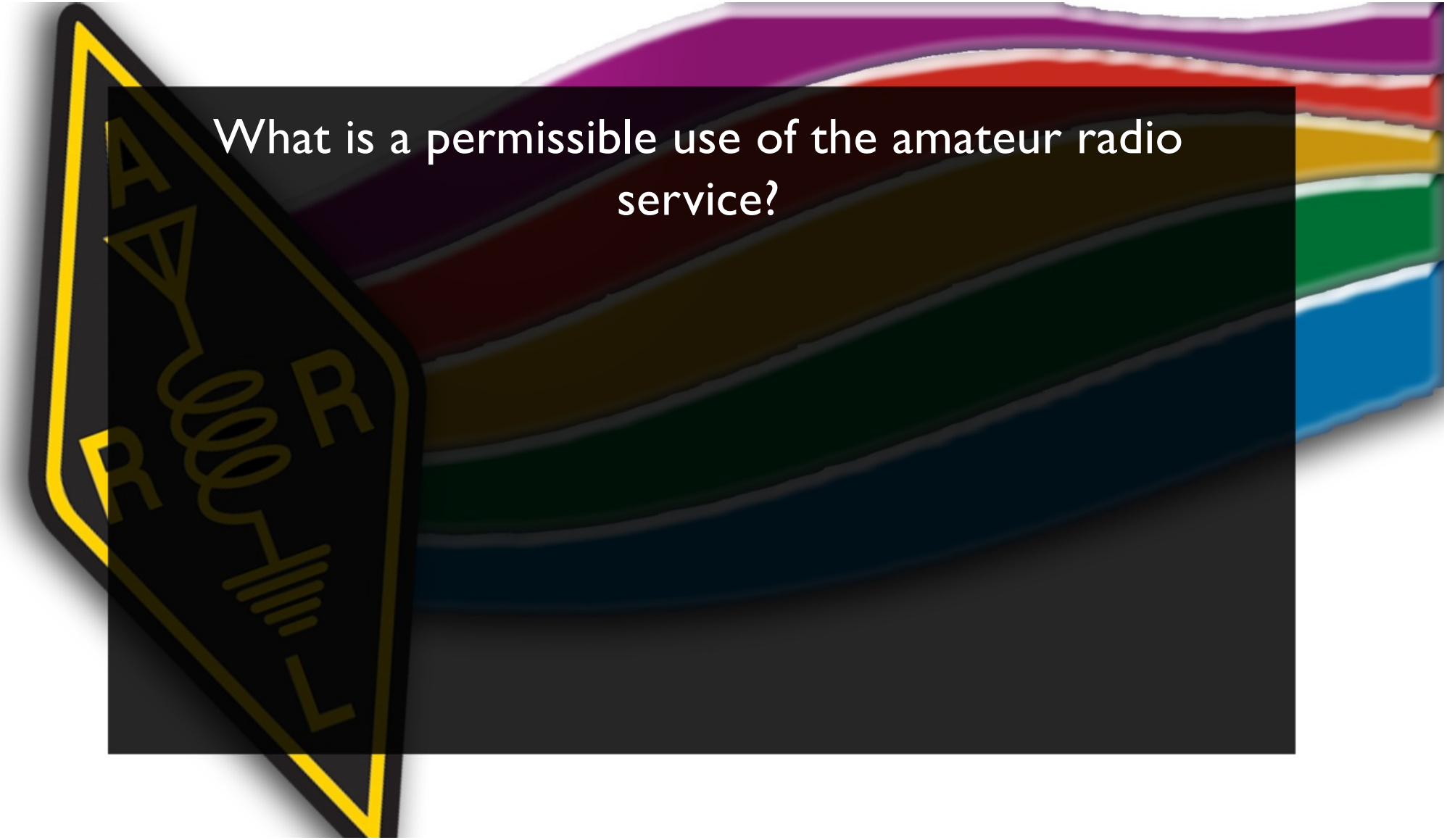
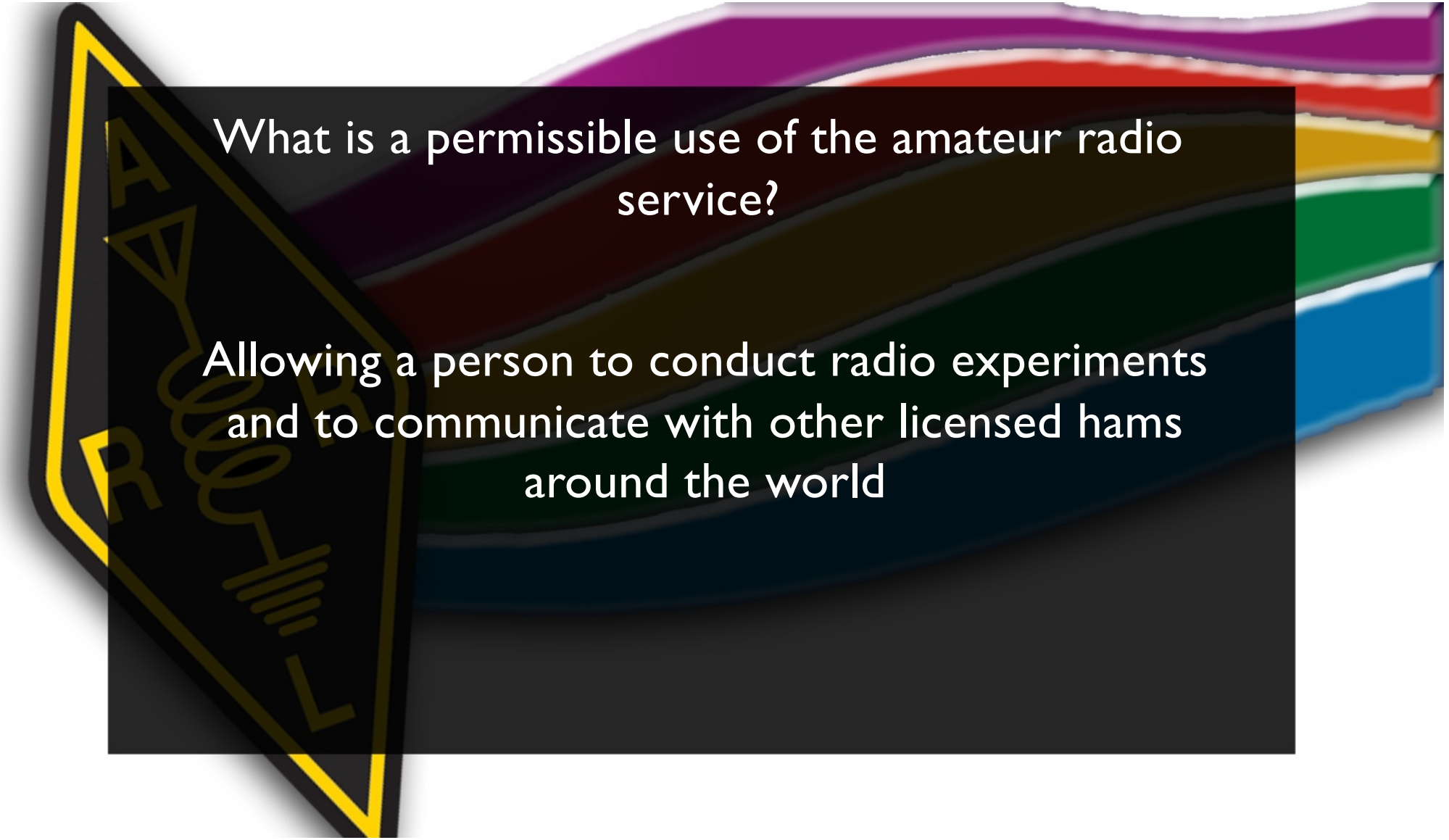


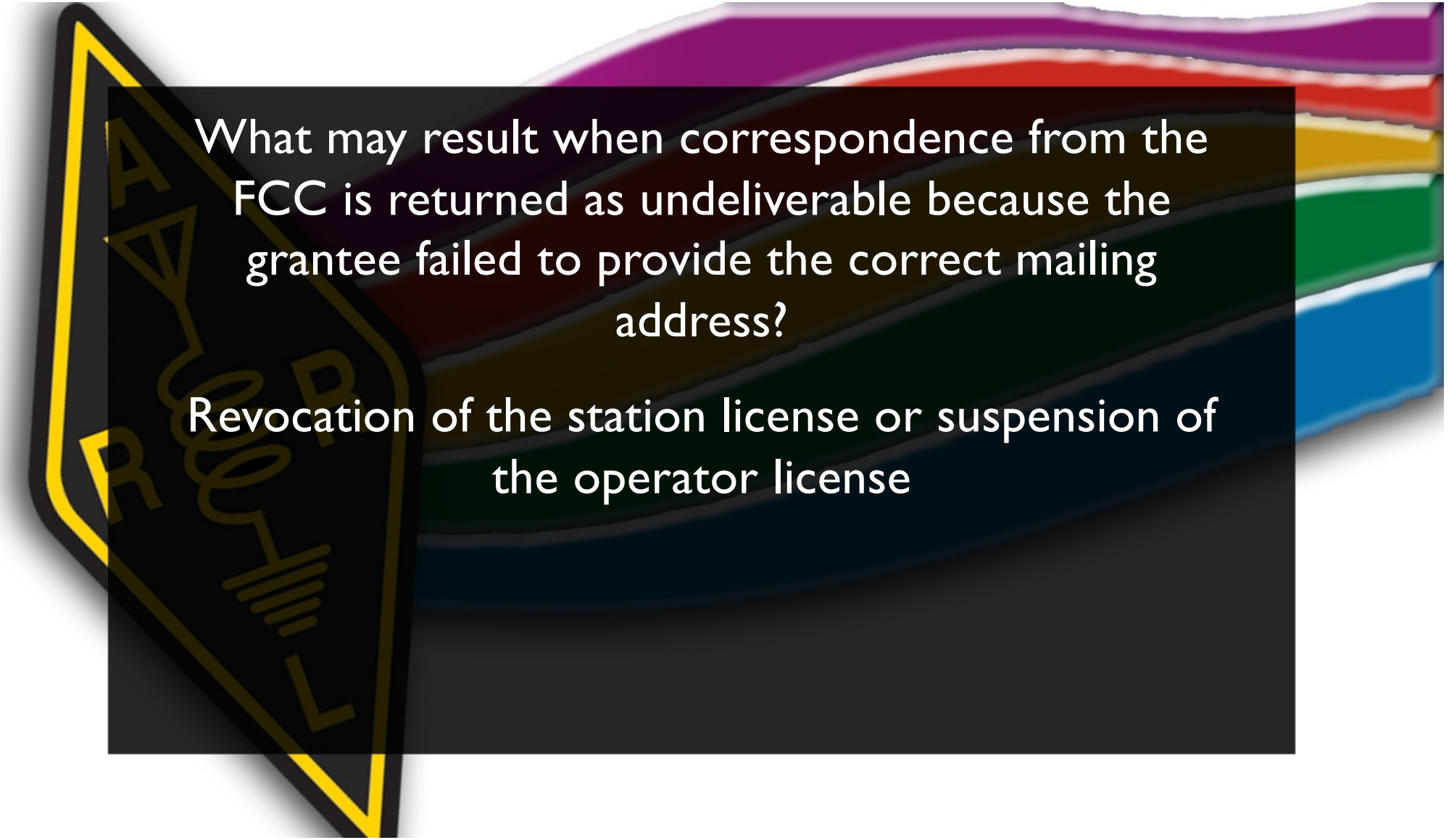
What is the FCC Part 97 definition of an amateur station?

A station in the Amateur Radio Service consisting of the apparatus necessary for carrying on radio communications


What is a permissible use of the amateur radio service?

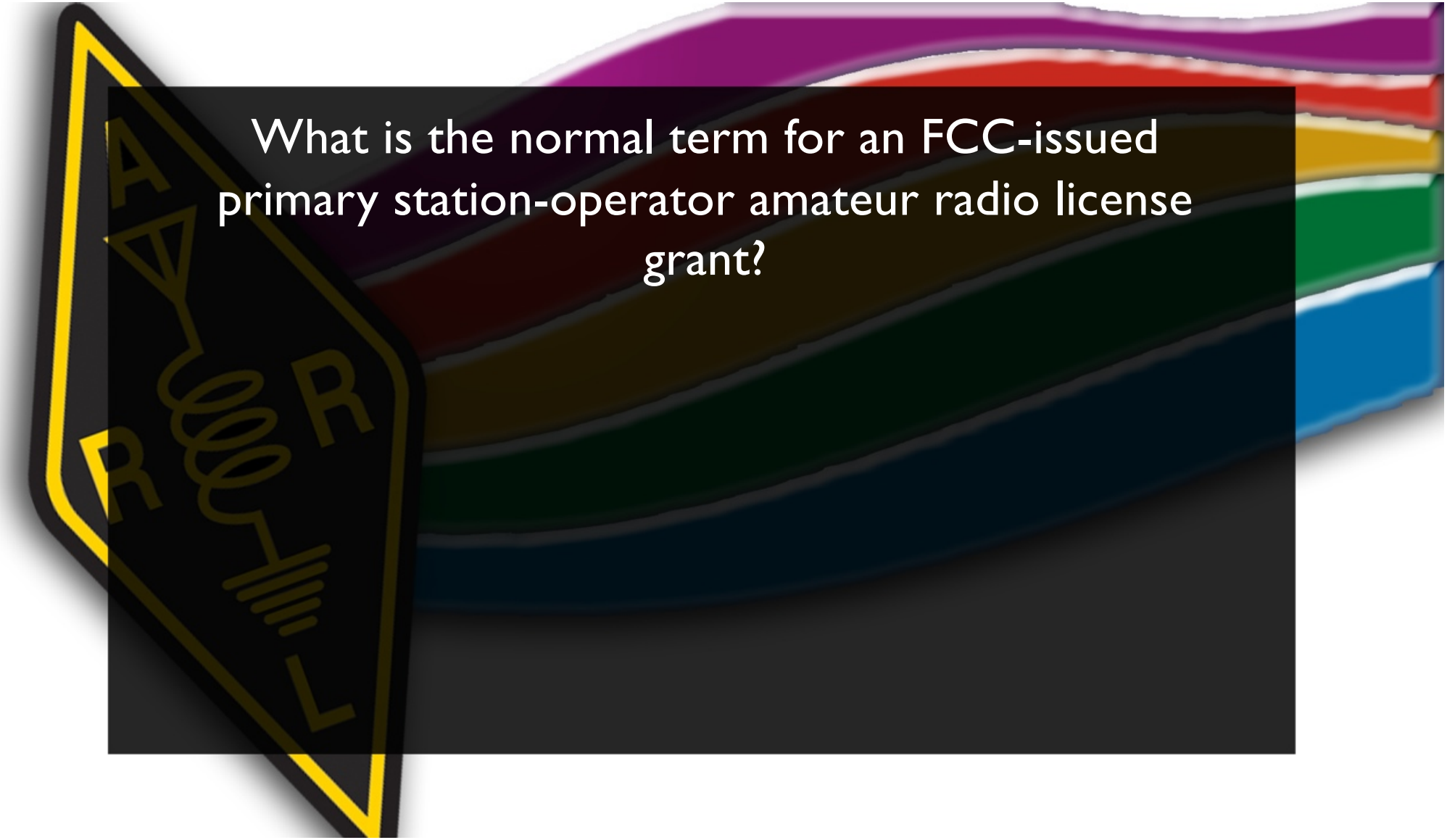

What is a permissible use of the amateur radio service?
Allowing a person to conduct radio experiments and to communicate with other licensed hams around the world

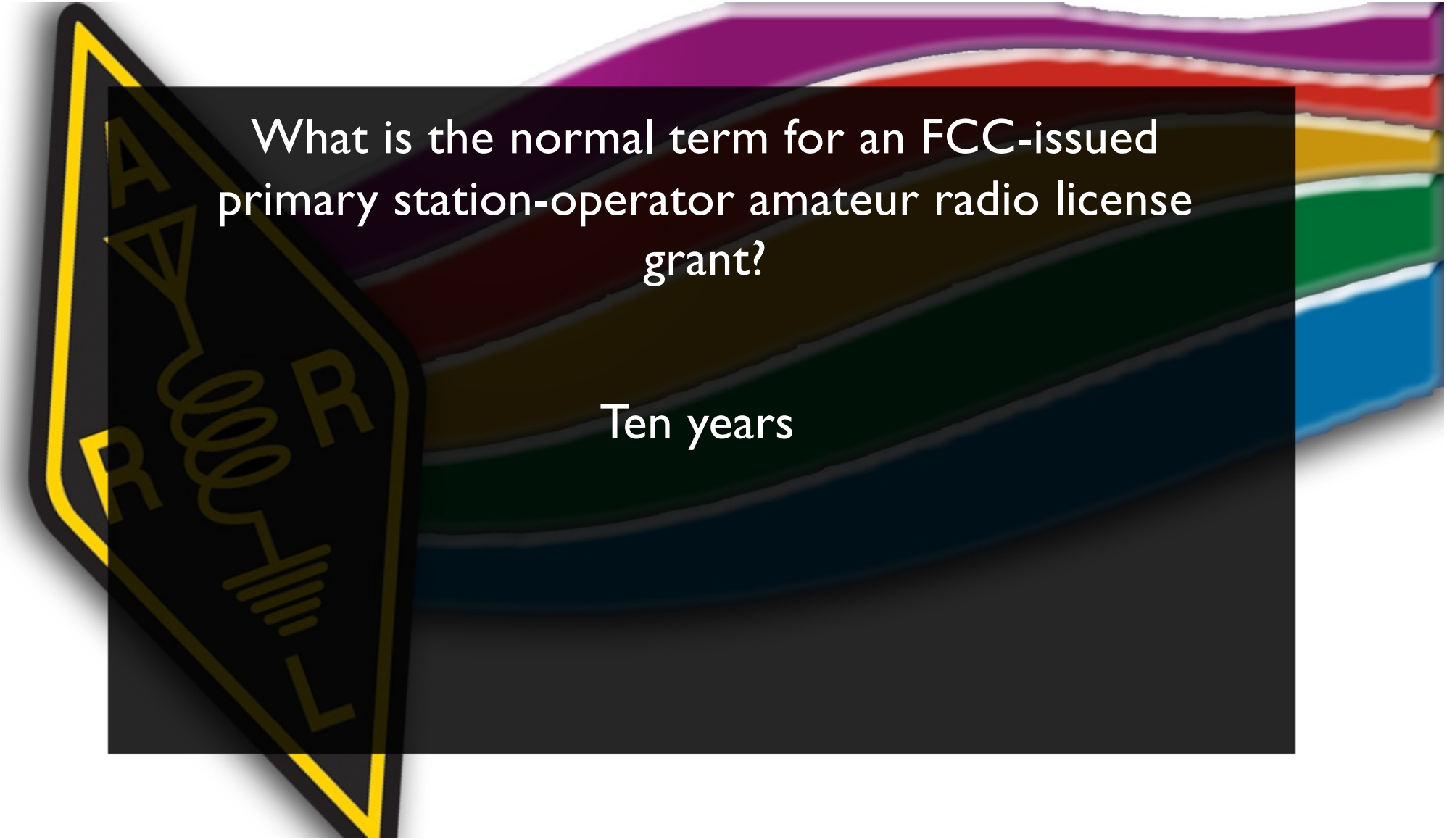
What may result when correspondence from the FCC is returned as undeliverable because the grantee failed to provide the correct mailing address?



What may result when correspondence from the FCC is returned as undeliverable because the grantee failed to provide the correct mailing address?

Revocation of the station license or suspension of the operator license

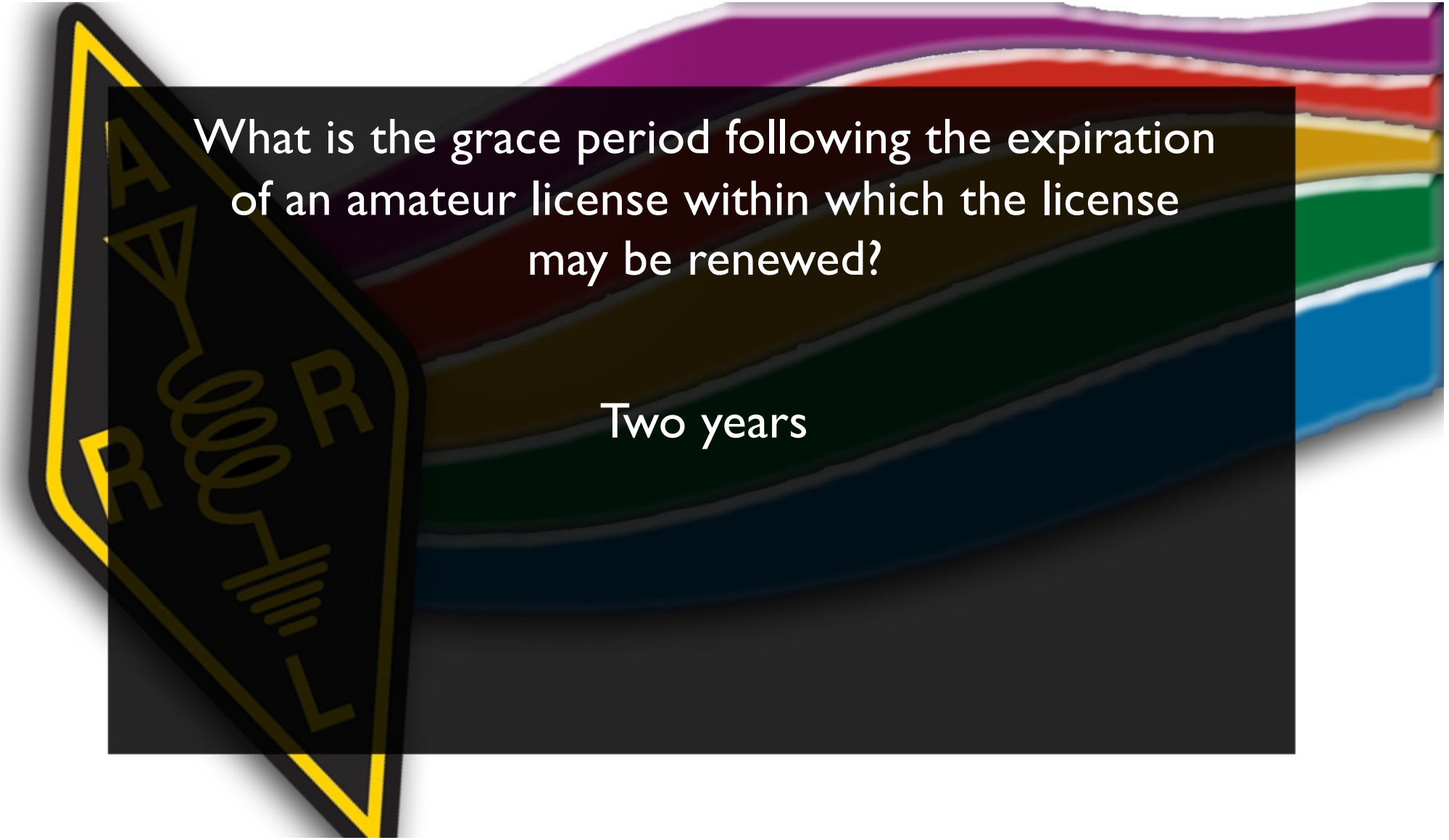

What is the normal term for an FCC-issued primary station-operator amateur radio license grant?

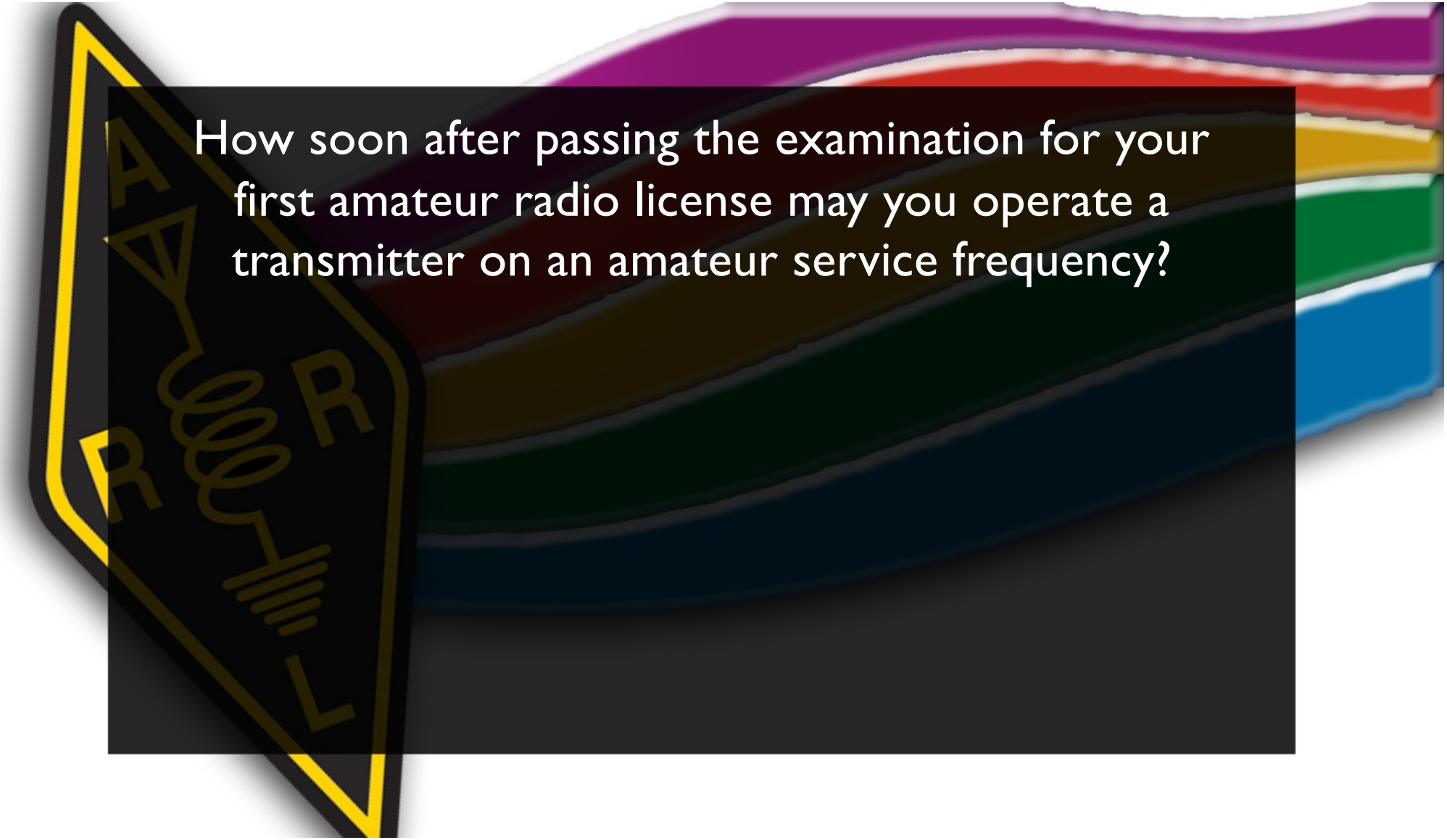


What is the normal term for an FCC-issued primary station-operator amateur radio license grant?

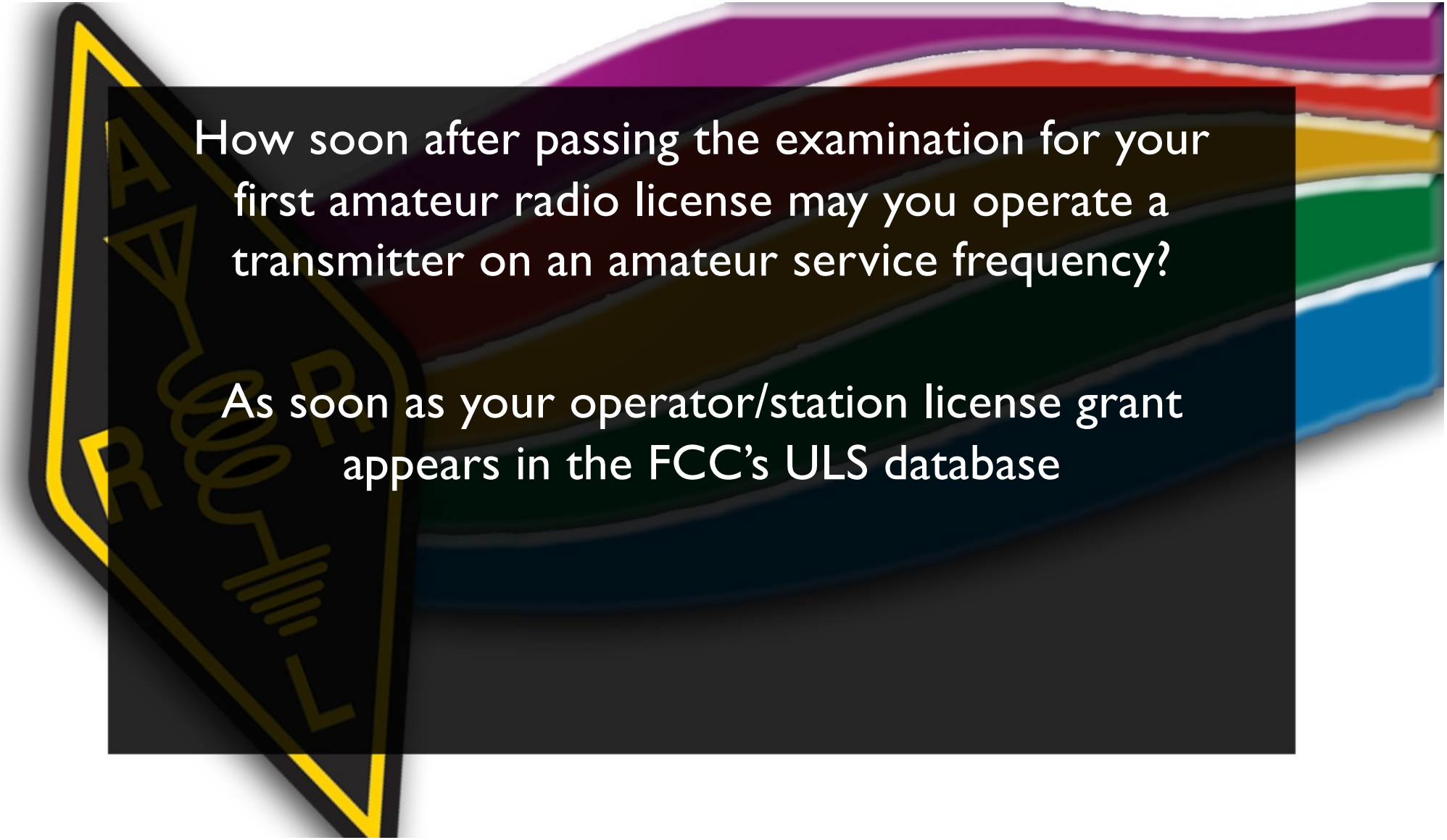
Ten years


What is the grace period following the expiration of an amateur license within which the license may be renewed?


What is the grace period following the expiration of an amateur license within which the license may be renewed?
Two years



How soon after passing the examination for your first amateur radio license may you operate a transmitter on an amateur service frequency?



How soon after passing the examination for your first amateur radio license may you operate a transmitter on an amateur service frequency?

As soon as your operator/station license grant appears in the FCC's ULS database


If your license has expired and is still within the allowable grace period, may you continue to operate a transmitter on amateur service frequencies?

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No, transmitting is not allowed until the FCC database shows that the license has been renewed


For which license classes are new licenses
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Technician, General, Amateur Extra


When must the station licensee make the station
and its records available for FCC inspection?

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At any time upon request by an FCC representative

Section 2 – Privileges

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- Power privileges
  - Maximum of 1500 watts peak envelope power (PEP)
    - Don’t use excessive power for the purpose

Section 2 – Privileges

- Some special cases where power is restricted

Technician HF Privileges
200 watts PEP maximum output

Band (Wavelength)	*Frequency (MHz)*
80 meters	3.525-3.600 (CW only)
40 meters	7.025-7.125 (CW only)
15 meters	21.025-21.200 (CW only)
10 meters	28.000-28.300 (CW, RTTY and data)
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  - See §97.313 for other restrictions

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What Can You Do with a Technician Class License?

- Frequency Privileges:
- Band versus frequency.

$$Band \approx \frac{300}{Freq(MHz)}$$

VHF and UHF Technician Amateur Bands

ITU Region 2 Band (Wavelength)	*Frequency Limits*
VHF Range	
6 meters	50 – 54 MHz
2 meters	144 – 148 MHz
1.25 meters	219 – 220 MHz
1.25 meters	222 – 225 MHz
UHF Range	
70 centimeters	420 – 450 MHz
33 centimeters	902 – 928 MHz
23 centimeters	1240 – 1300 MHz
13 centimeters	2300 – 2310 MHz
13 centimeters	2390 – 2450 MHz

What Can You Do with a Technician Class License?

- Emission Privileges:

Amateur Emission Types

Emission	*Description*
CW	Morse code telegraphy
Data	Computer-to-computer communication modes, usually called digital modes
Image	Television (fast-scan and slow-scan) and facsimile or fax
MCW	Tone-modulated CW, Morse code generated by keying an audio tone
Phone	Speech or voice communications
Pulse	Communications using a sequence of pulses whose characteristics are modulated in order to carry information
RTTY	Narrow-band, direct-printing telegraphy received by automatic equipment, such as a computer or teleprinter
SS	Spread-spectrum communications in which the signal is spread out over a wide band of frequencies
Test	Transmissions containing no information

Primary and Secondary Allocations

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  - Primary Users
  - Secondary Users – must avoid interfering with users of the primary service

Band Plans

Band Plans

- Voluntary arrangements that apply under normal band loading conditions

10 Meters (28-29.7 MHz)

28.000-28.070	CW
28.070-28.150	RTTY
28.150-28.190	CW
28.200-28.300	Beacons
28.300-29.300	Phone
28.680	SSTV
29.000-29.200	AM
29.300-29.510	Satellite Downlinks
29.520-29.590	Repeater Inputs
29.600	FM Simplex
29.610-29.700	Repeater Outputs

Frequency Coordinators

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- Groups that help allocate repeater channels to minimize interference

Practice Questions


What entities recommend transmit/receive channels and other parameters for auxiliary and repeater stations?

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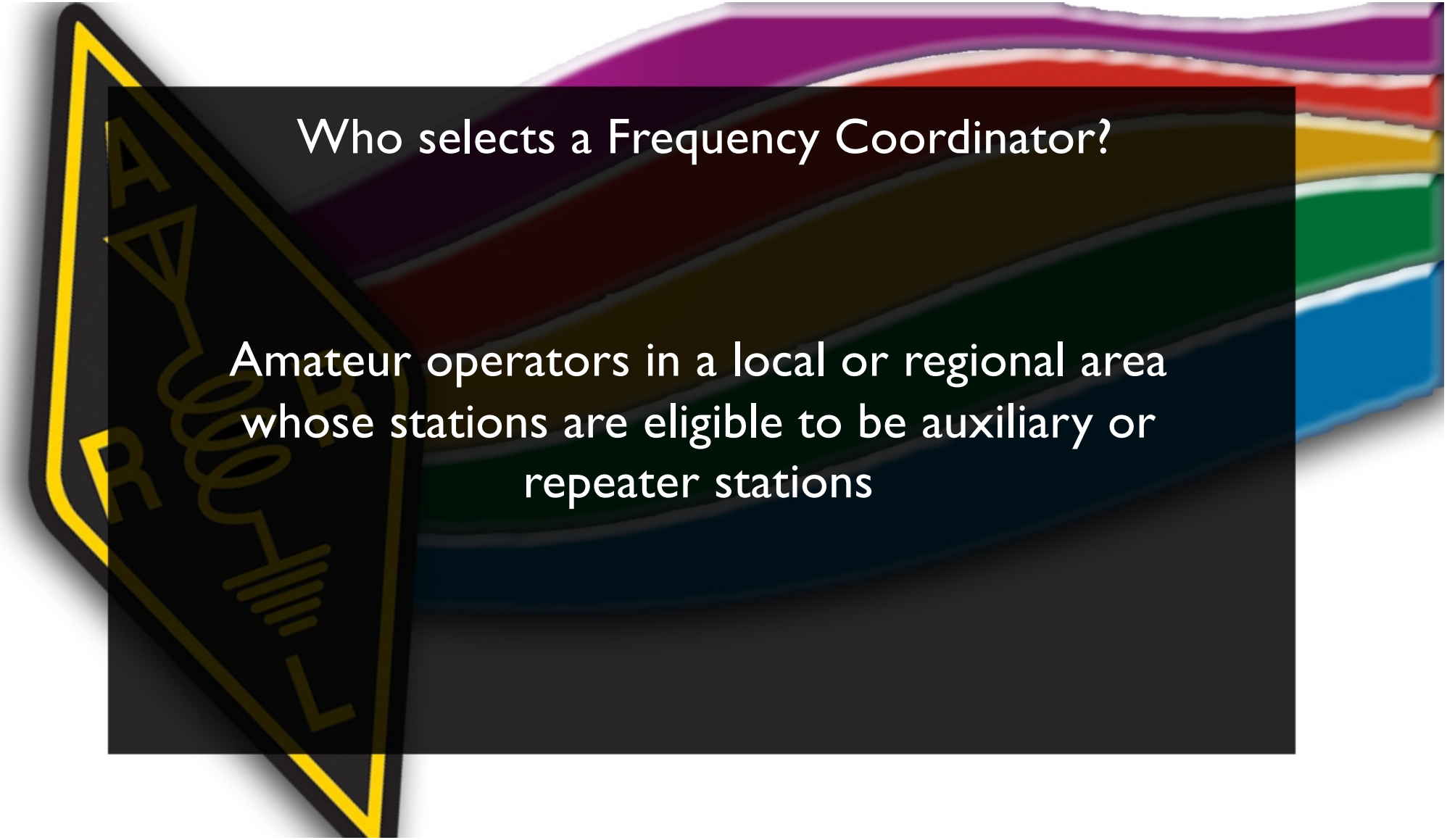
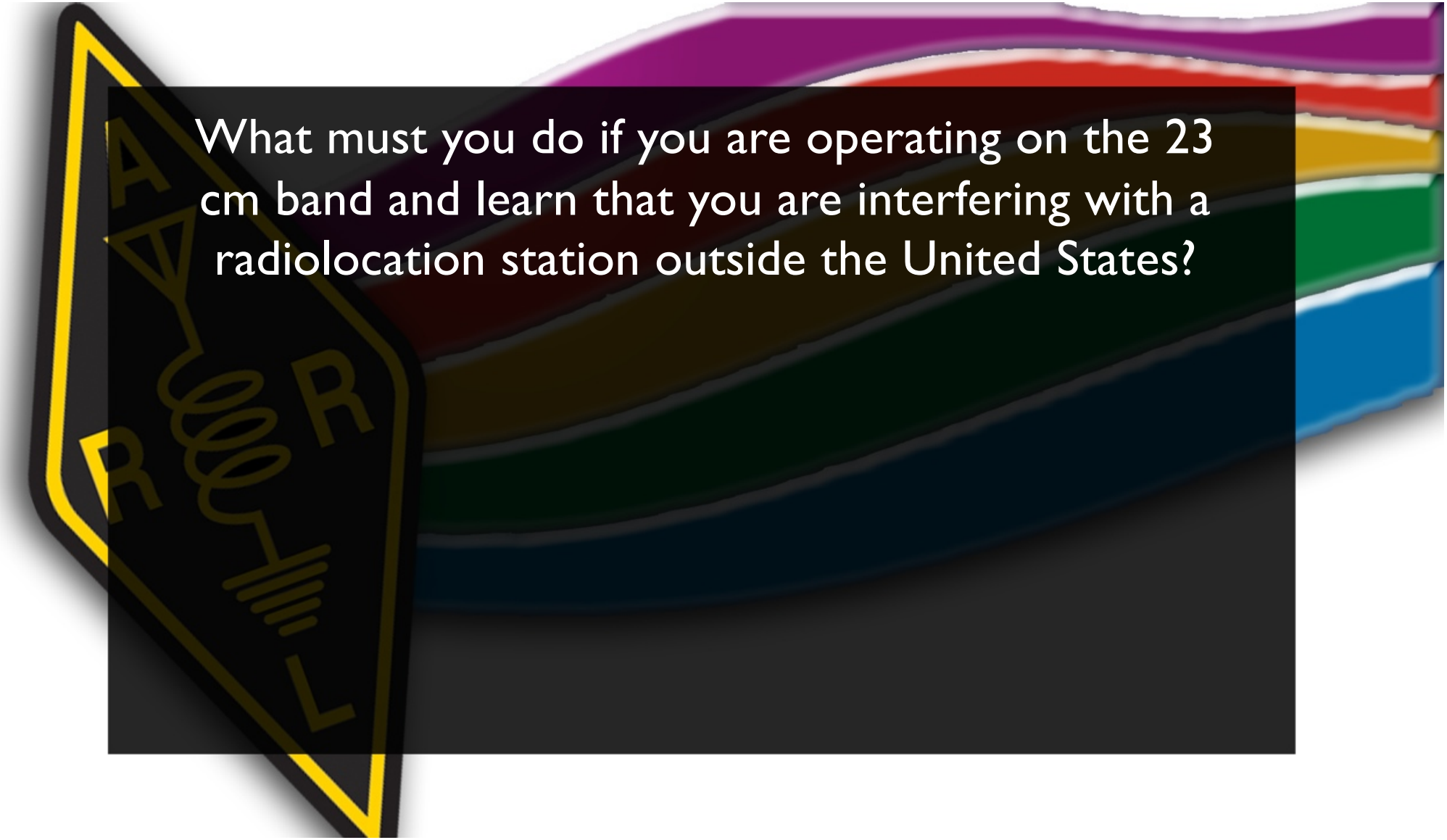
Frequency Coordinator

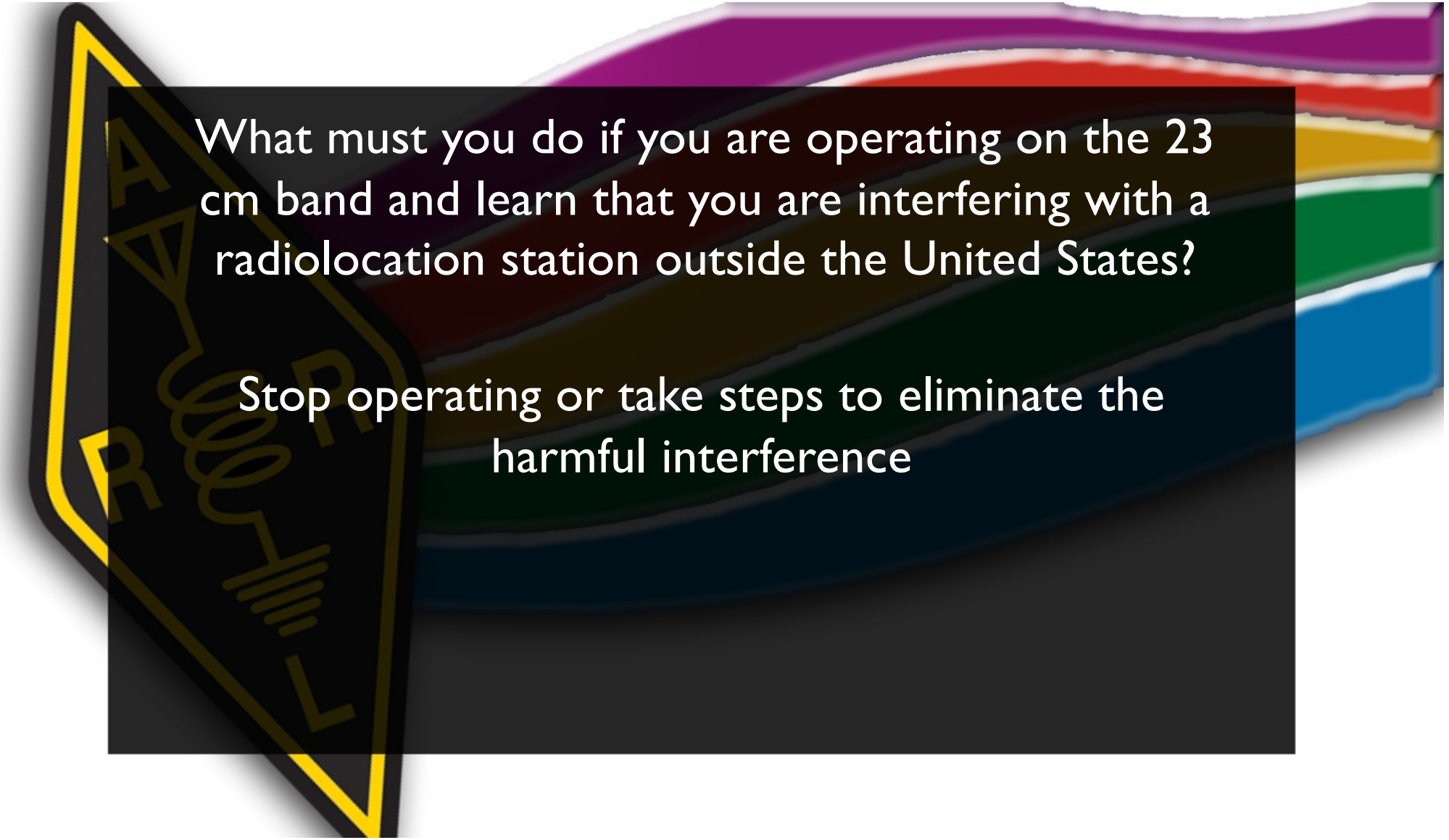

Who selects a Frequency Coordinator?



Who selects a Frequency Coordinator?

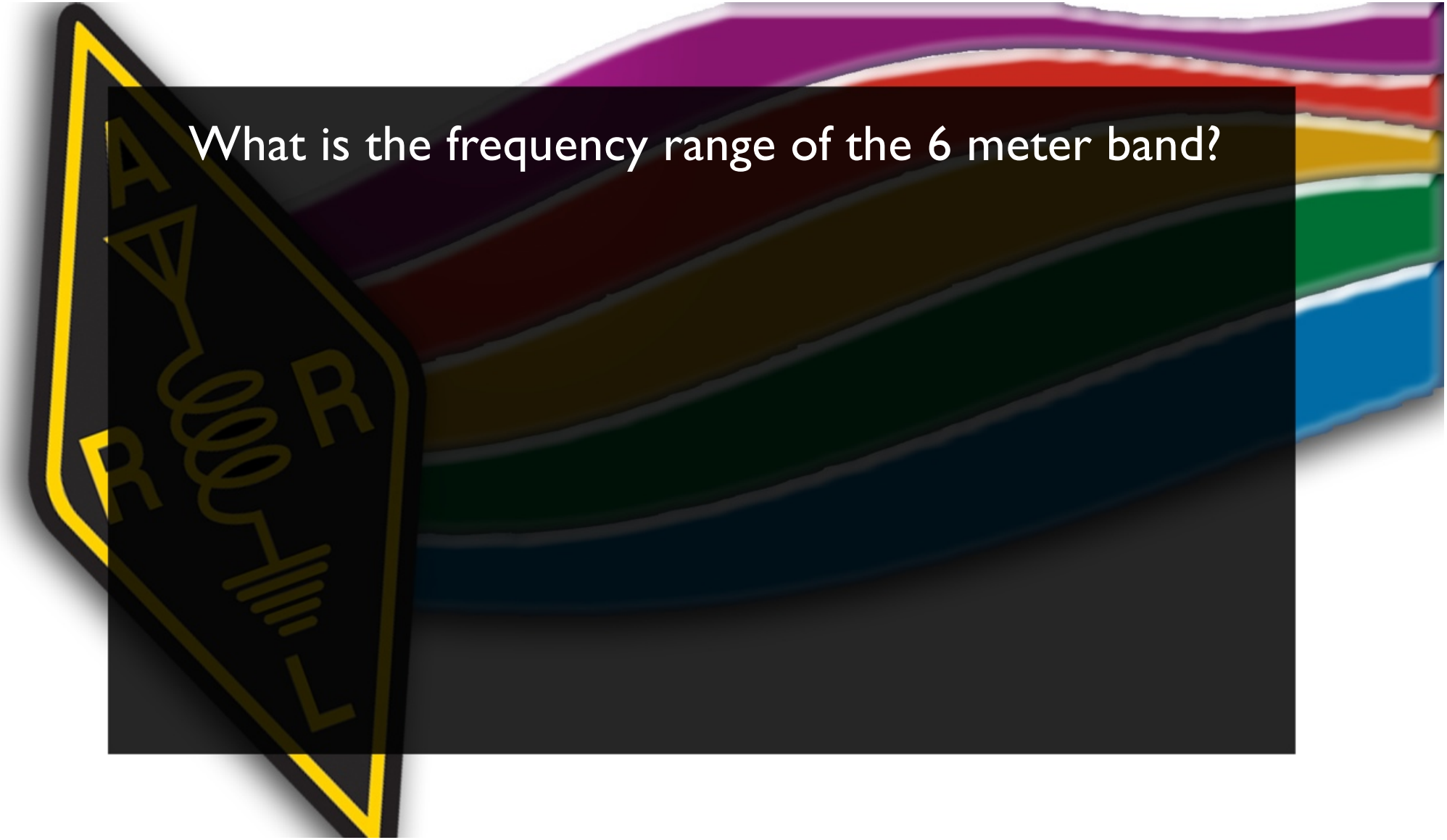
Amateur operators in a local or regional area whose stations are eligible to be auxiliary or repeater stations

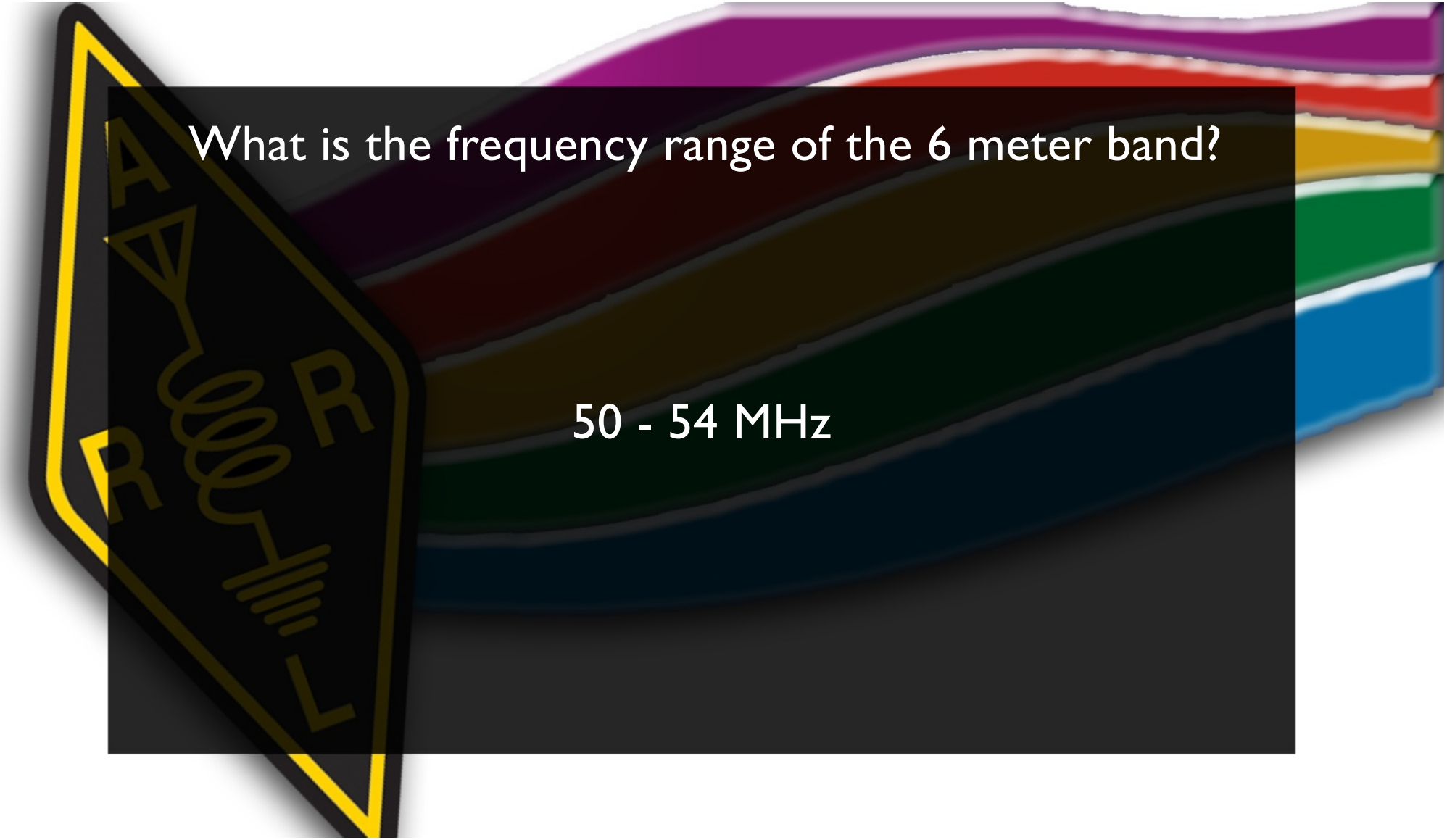

What must you do if you are operating on the 23 cm band and learn that you are interfering with a radiolocation station outside the United States?



What must you do if you are operating on the 23 cm band and learn that you are interfering with a radiolocation station outside the United States?

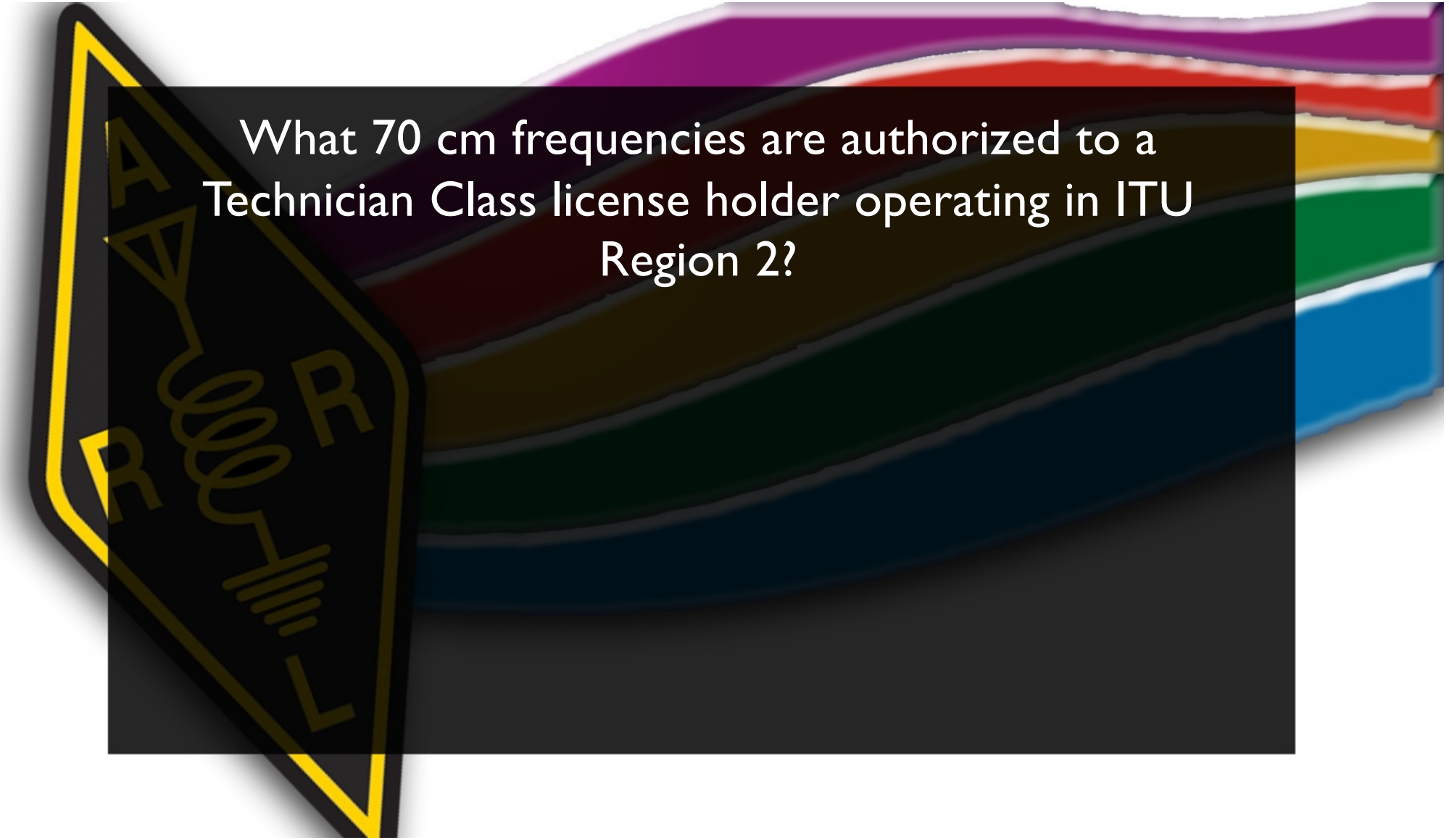
Stop operating or take steps to eliminate the harmful interference


What is the frequency range of the 6 meter band?

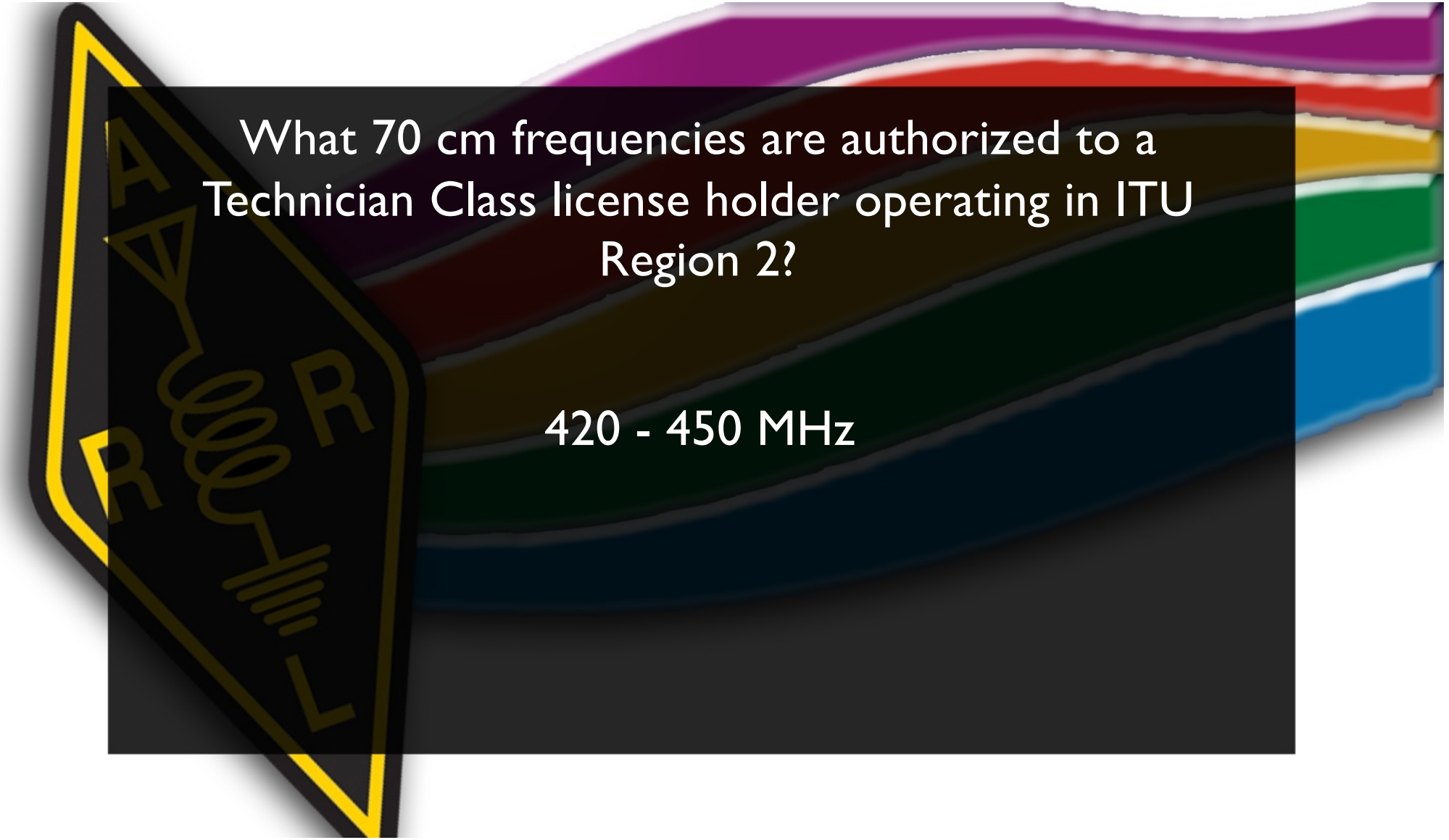

What is the frequency range of the 6 meter band?
50 - 54 MHz


Which amateur band are you using when your station is transmitting on 146.52 MHz?


Which amateur band are you using when your station is transmitting on 146.52 MHz?
2 meter band



What 70 cm frequencies are authorized to a Technician Class license holder operating in ITU Region 2?



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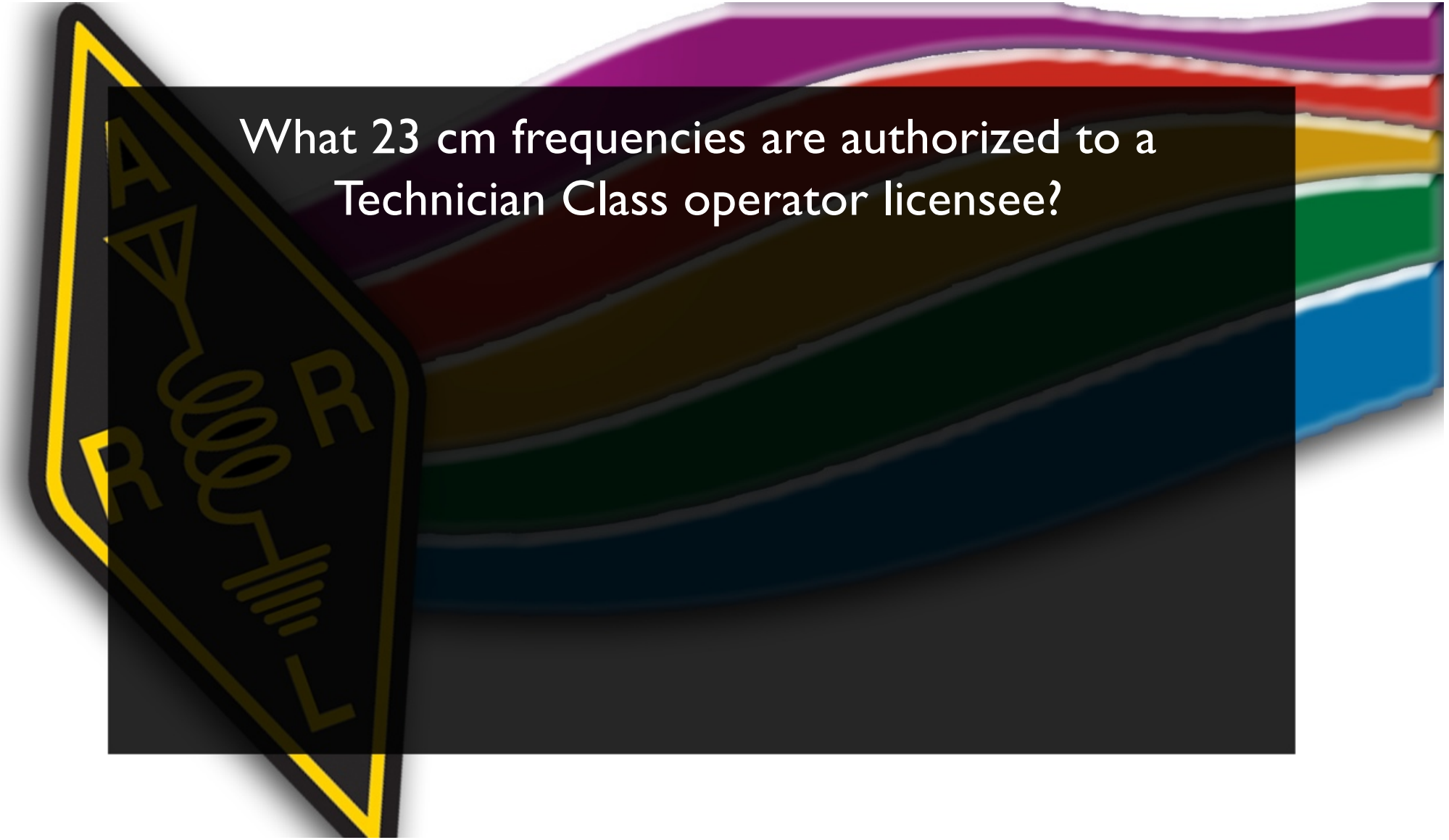
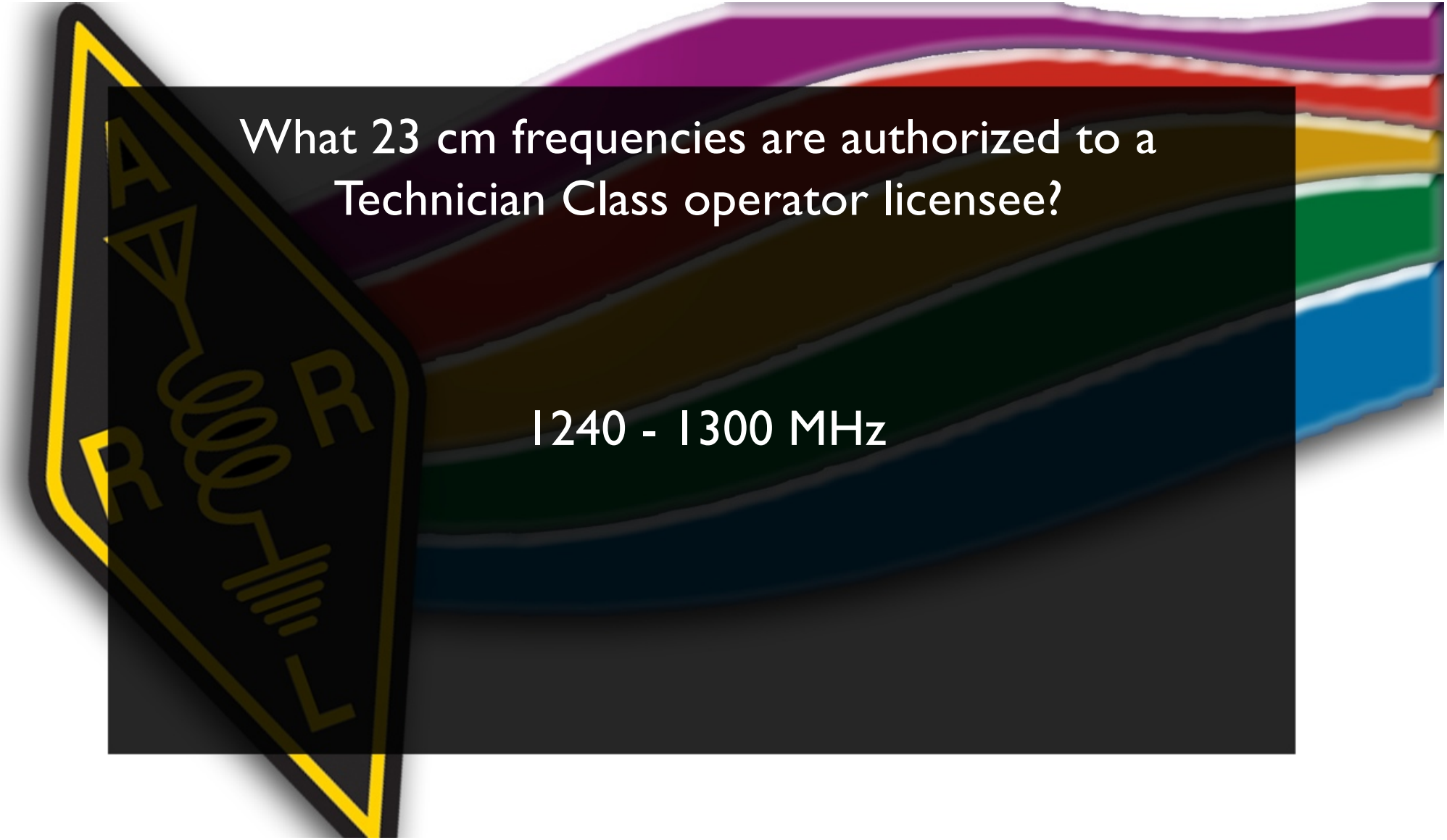
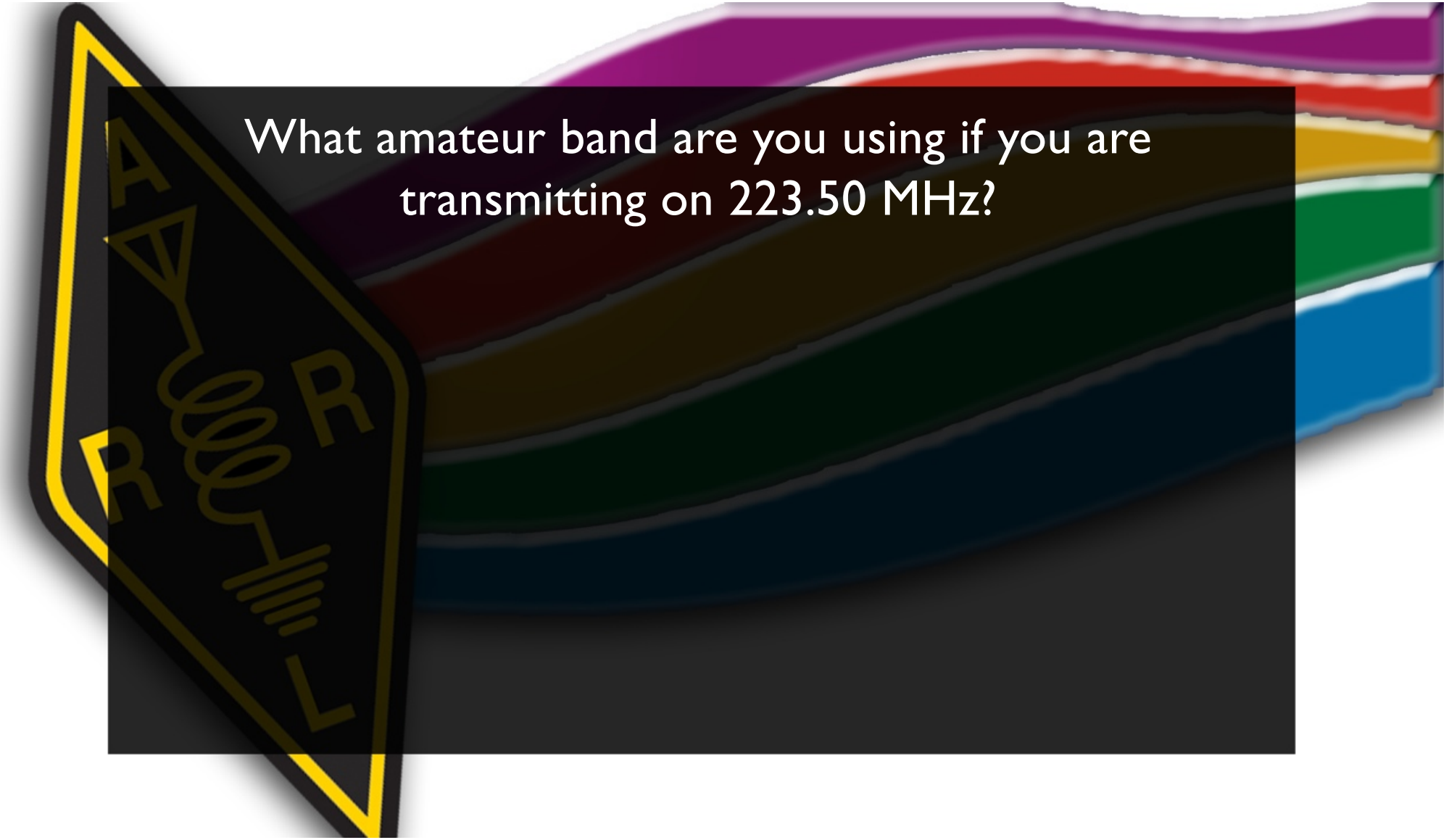
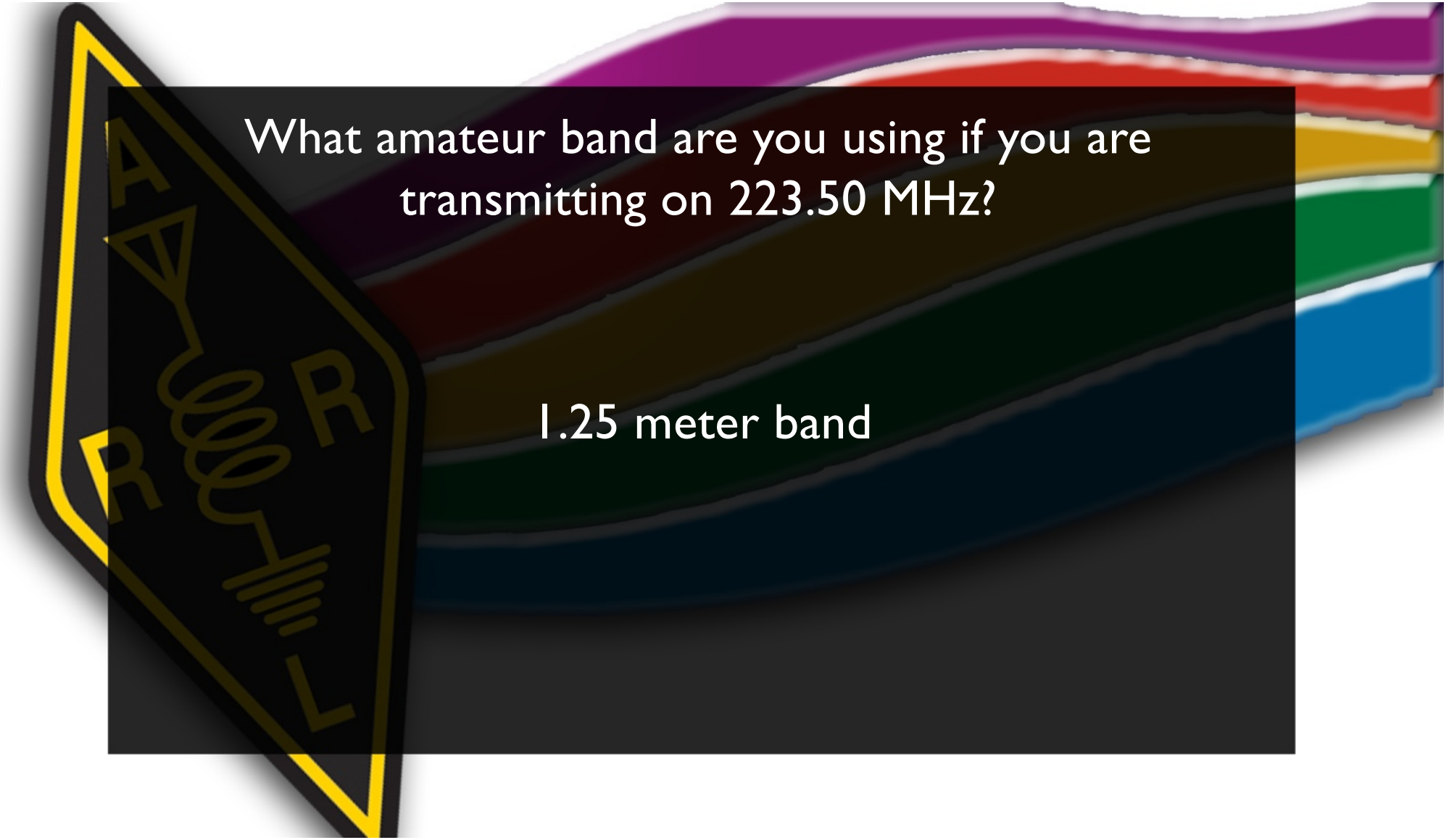
420 - 450 MHz


What 23 cm frequencies are authorized to a Technician Class operator licensee?

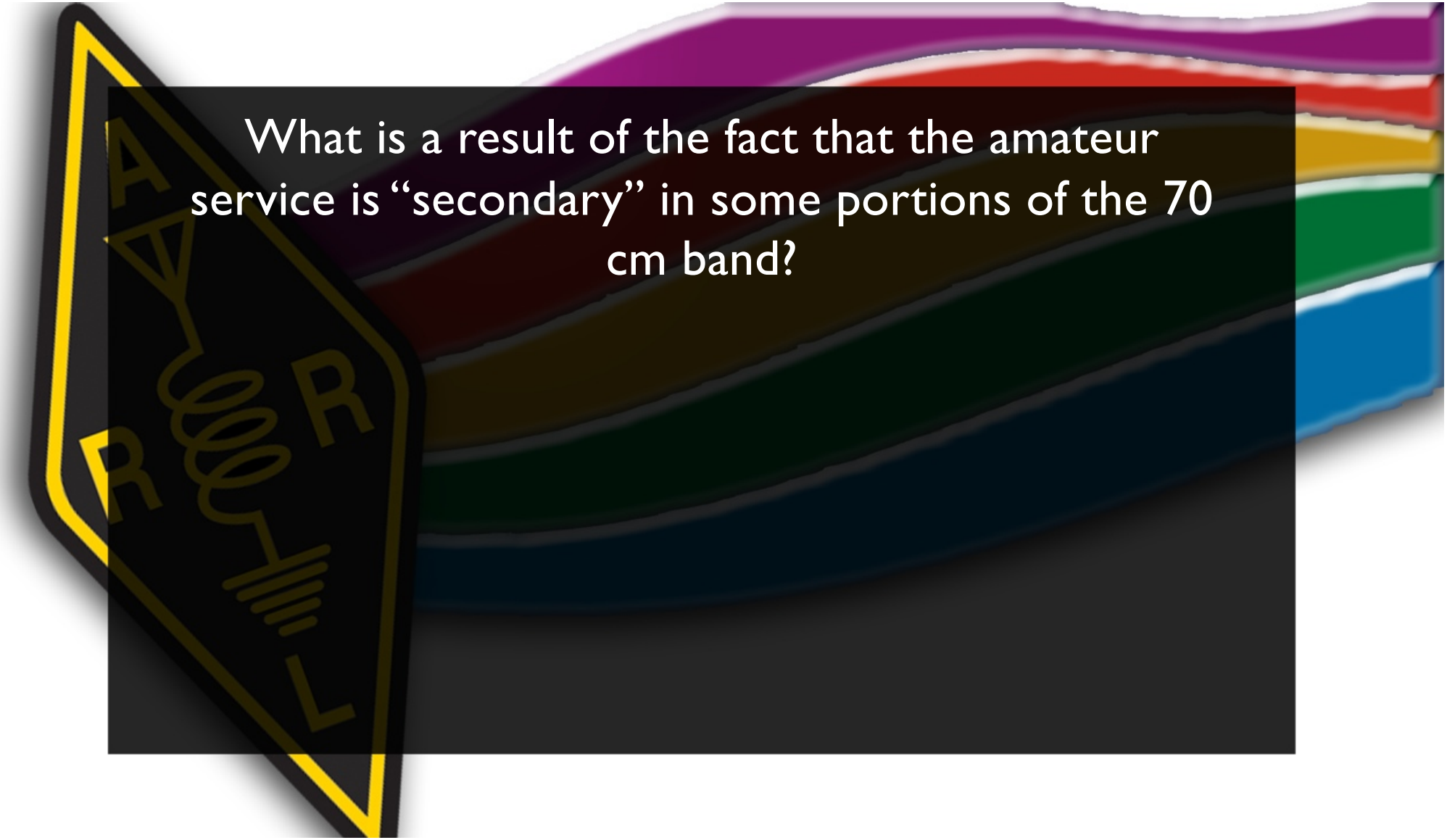

What 23 cm frequencies are authorized to a Technician Class operator licensee?
1240 - 1300 MHz


What amateur band are you using if you are transmitting on 223.50 MHz?

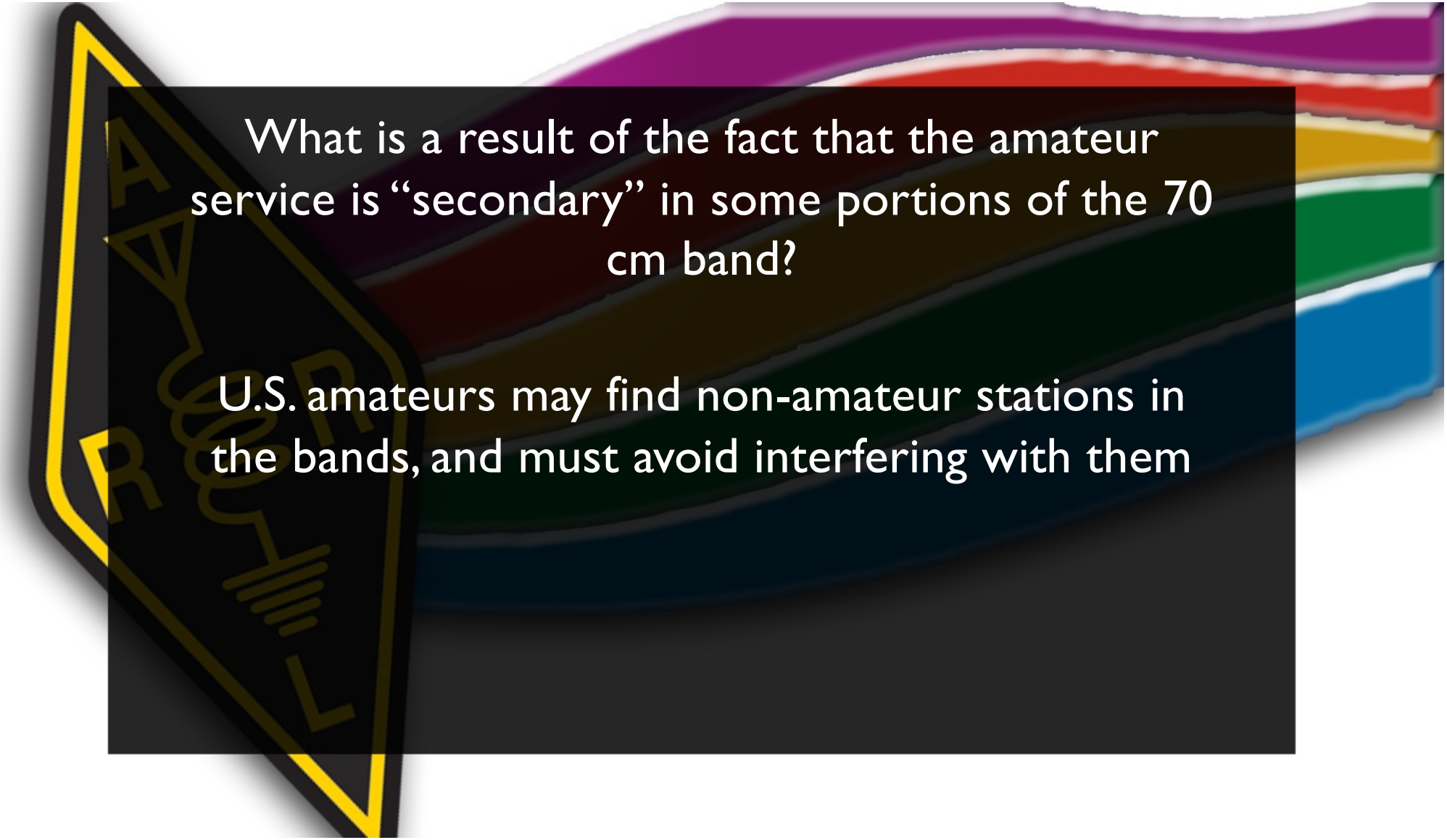


What amateur band are you using if you are transmitting on 223.50 MHz?

1.25 meter band

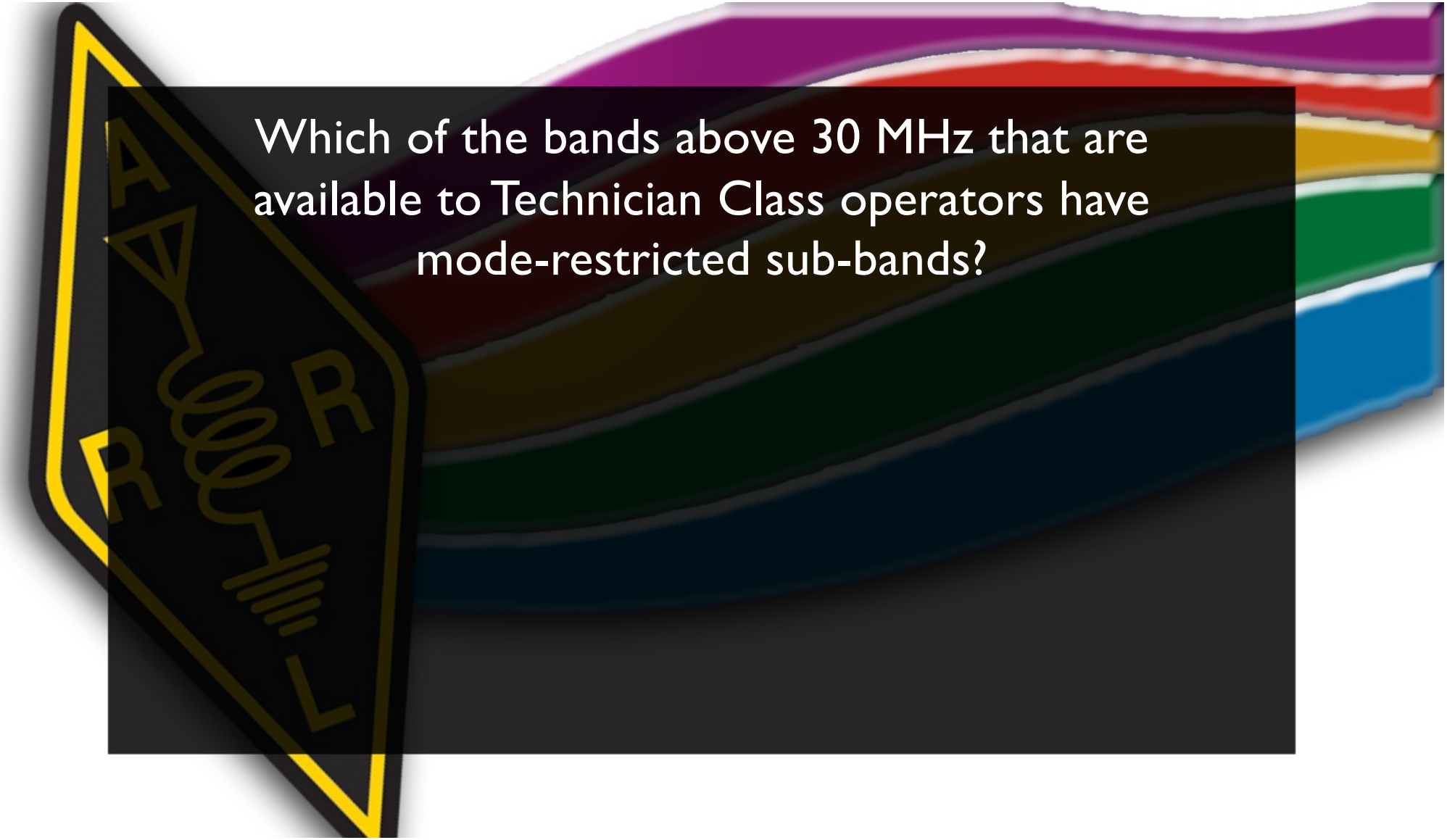


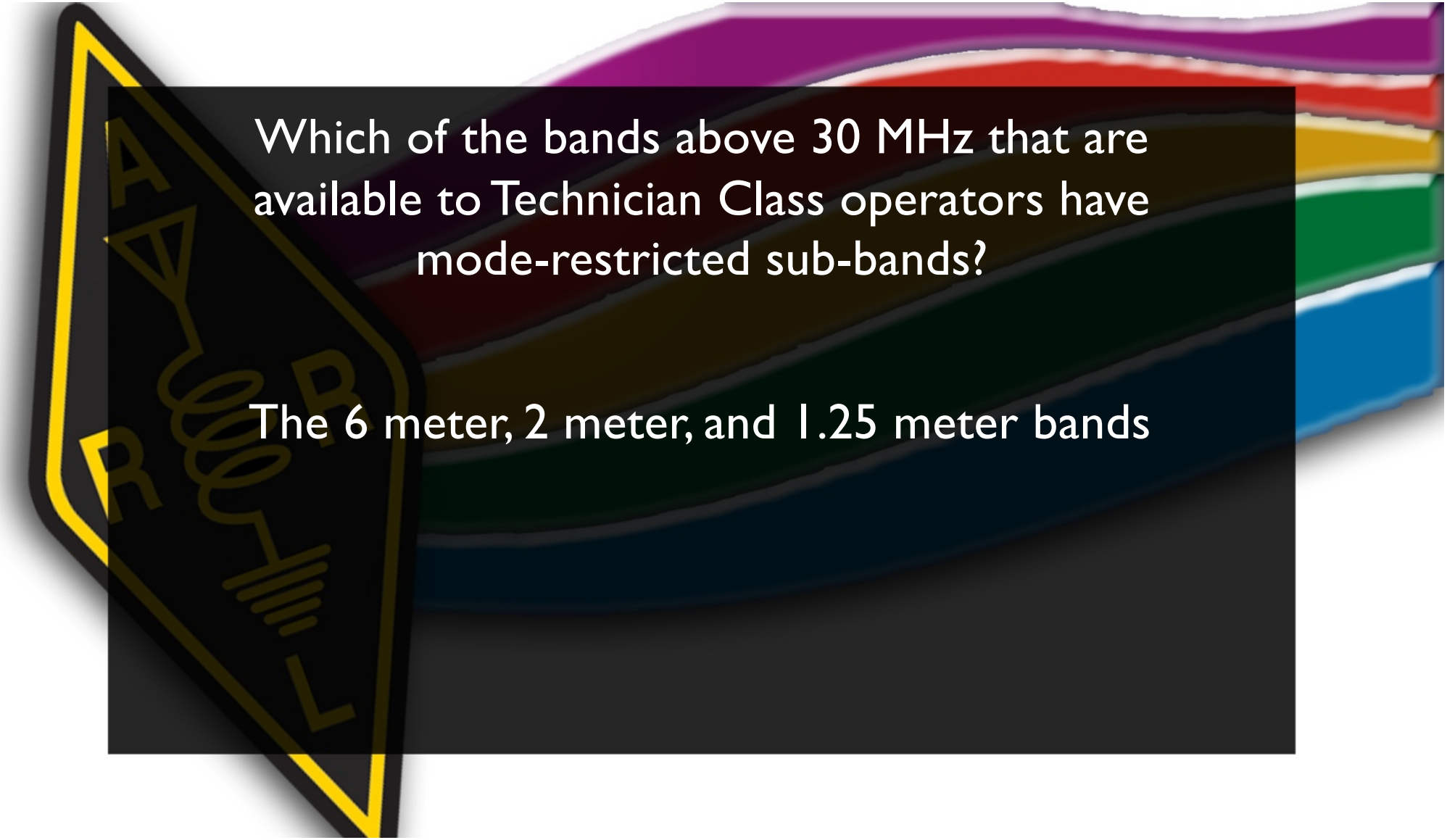
What is a result of the fact that the amateur service is “secondary” in some portions of the 70 cm band?



What is a result of the fact that the amateur service is "secondary" in some portions of the 70 cm band?

U.S. amateurs may find non-amateur stations in the bands, and must avoid interfering with them


Which of the bands above 30 MHz that are available to Technician Class operators have mode-restricted sub-bands?



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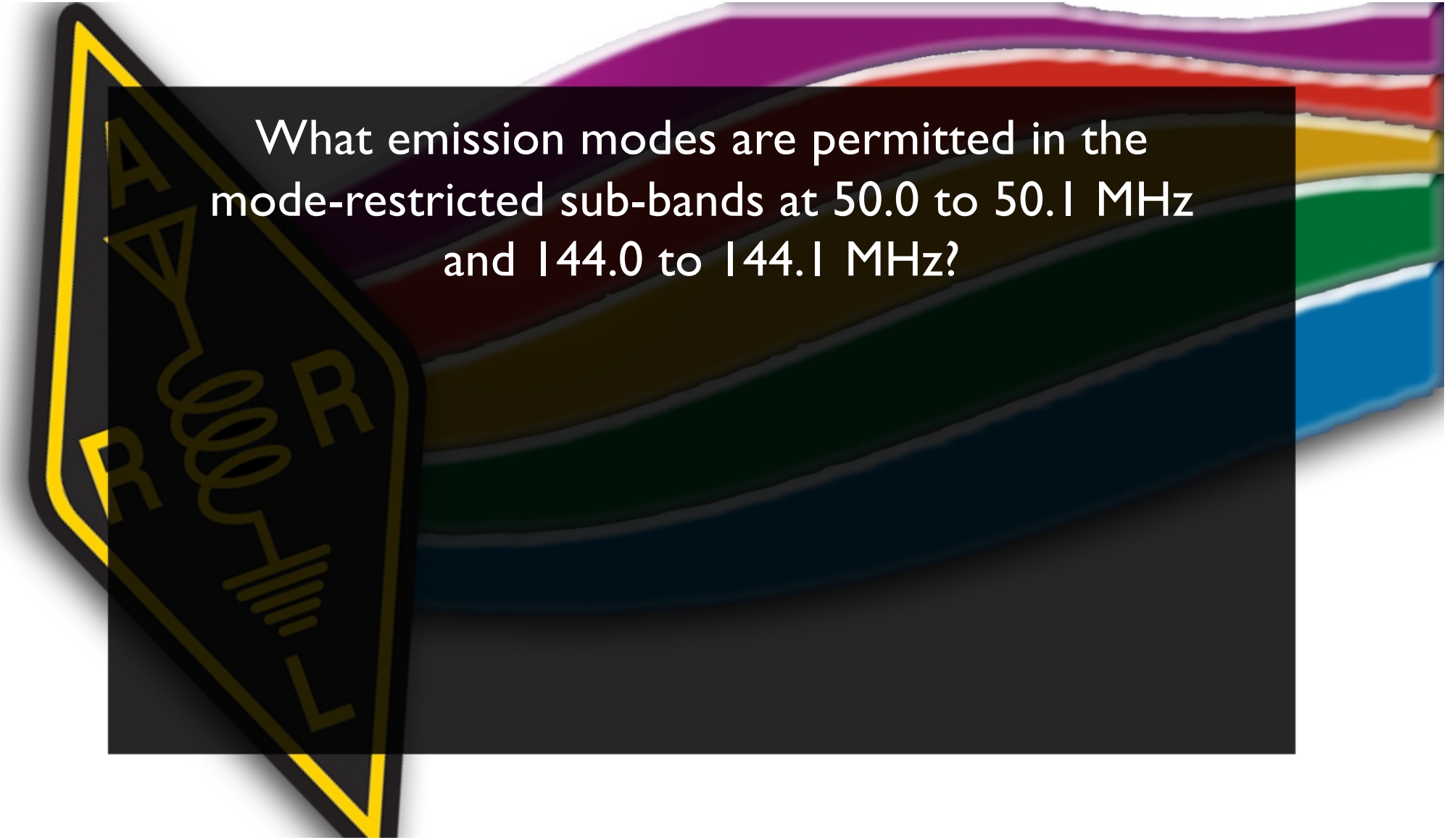
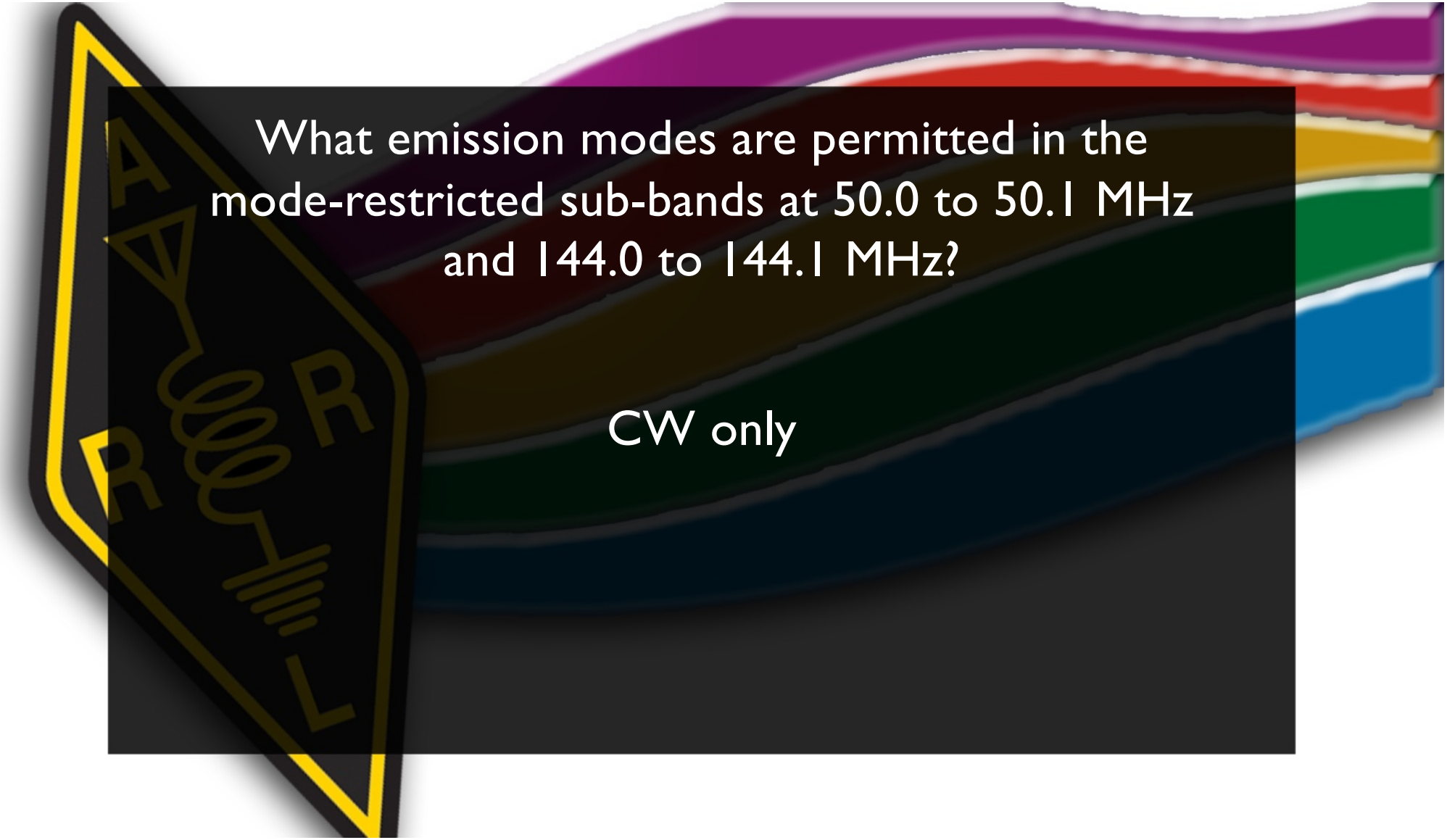
The 6 meter, 2 meter, and 1.25 meter bands


What emission modes are permitted in the mode-restricted sub-bands at 50.0 to 50.1 MHz and 144.0 to 144.1 MHz?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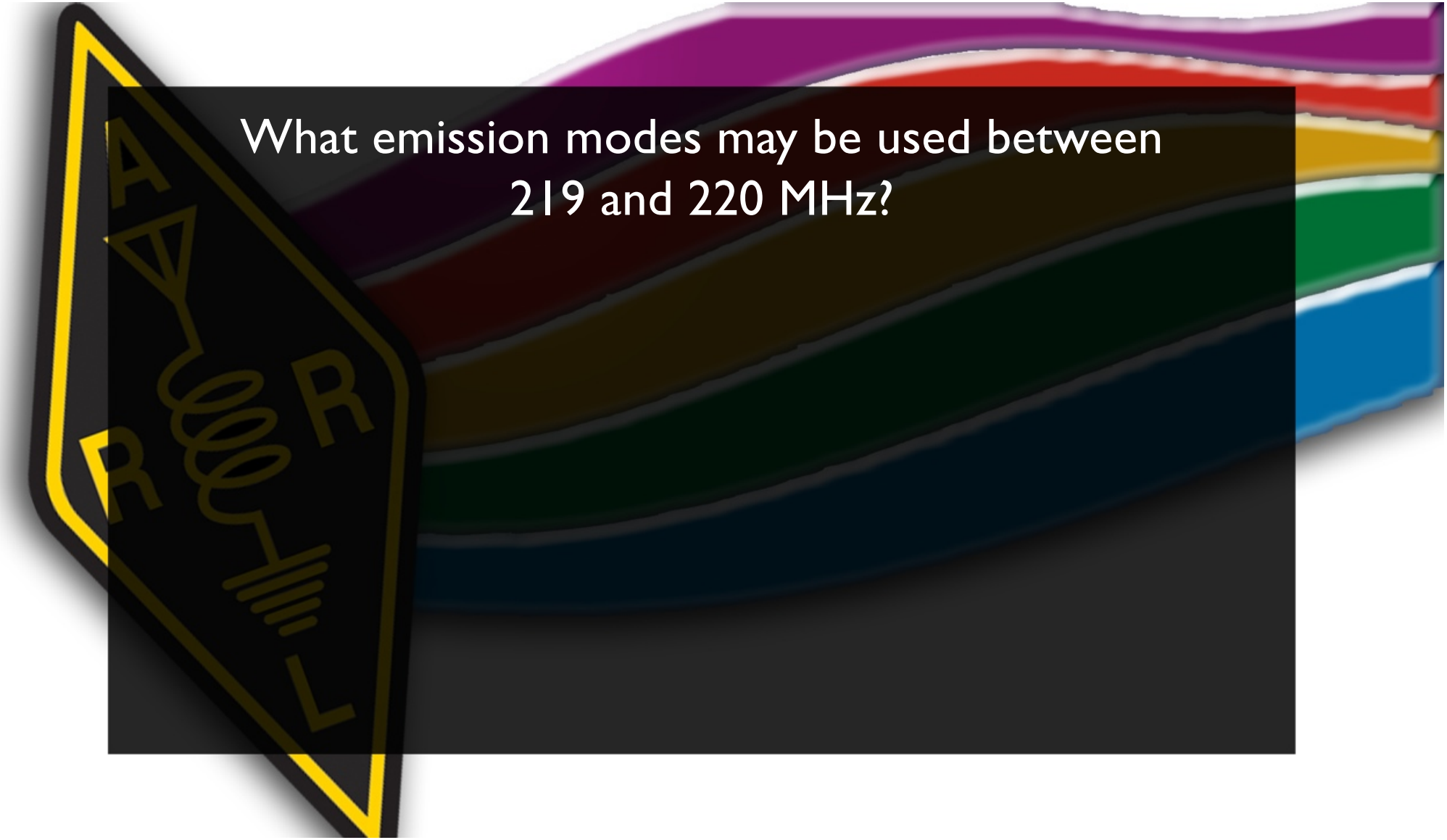
CW only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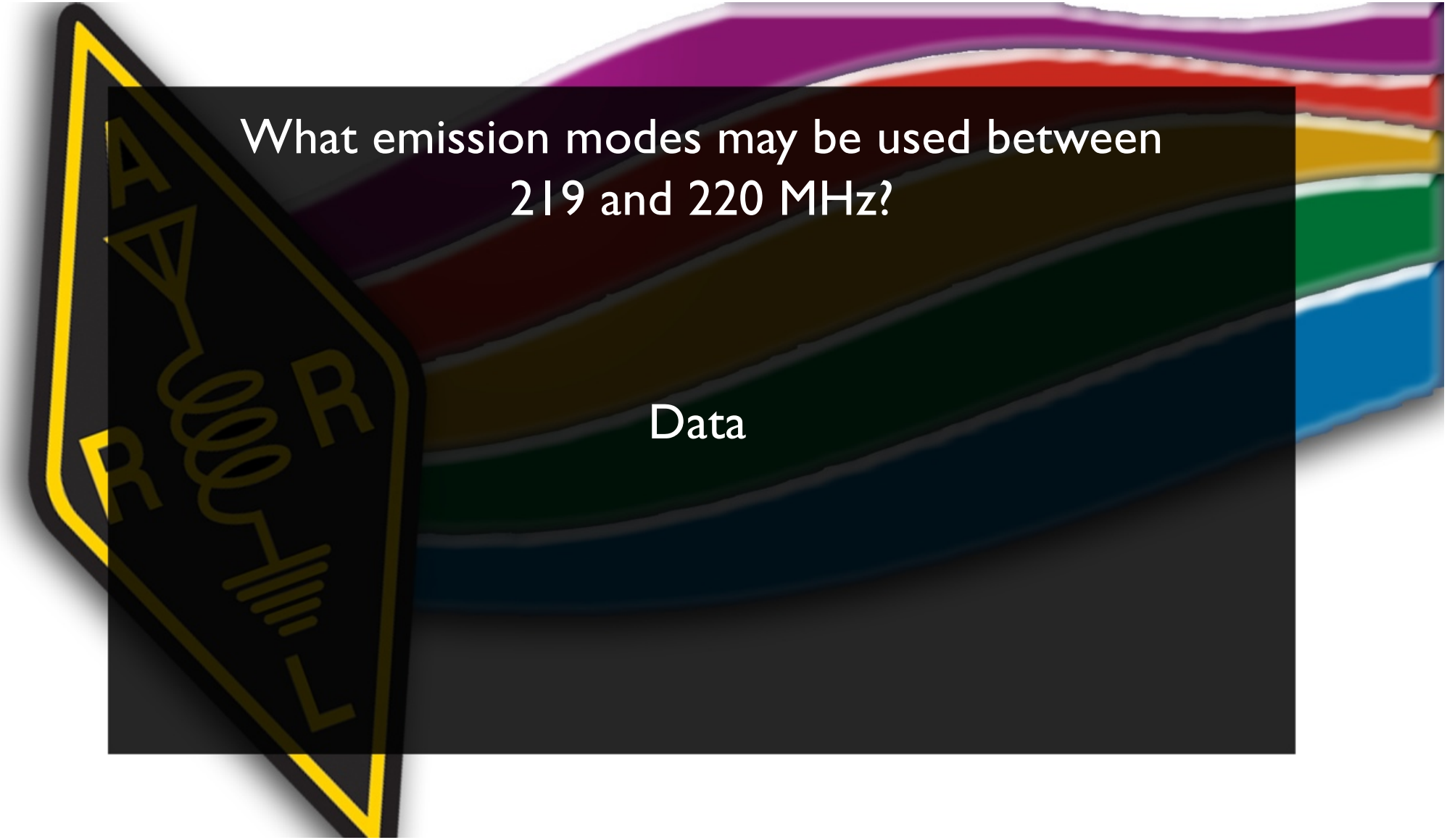
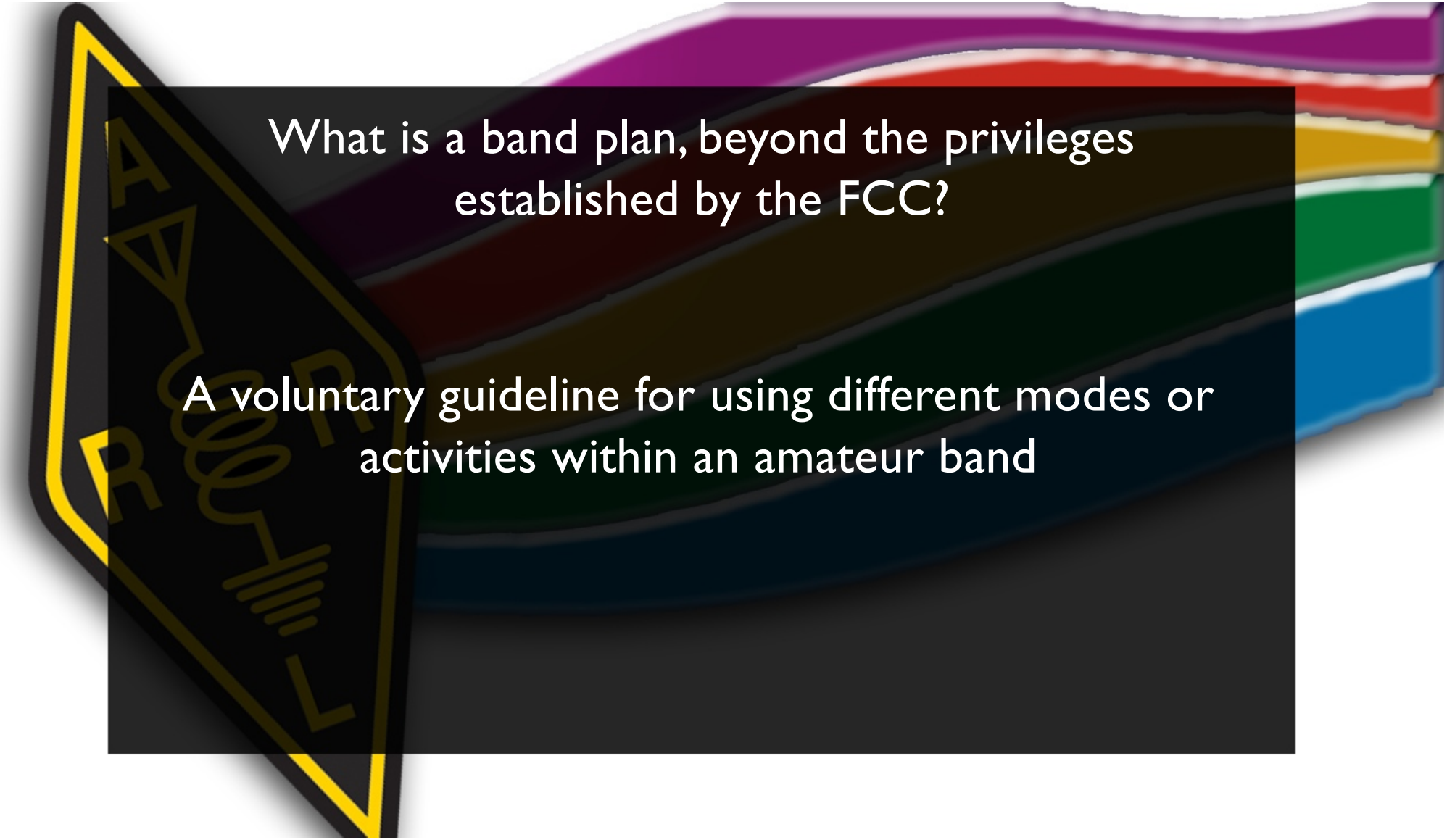
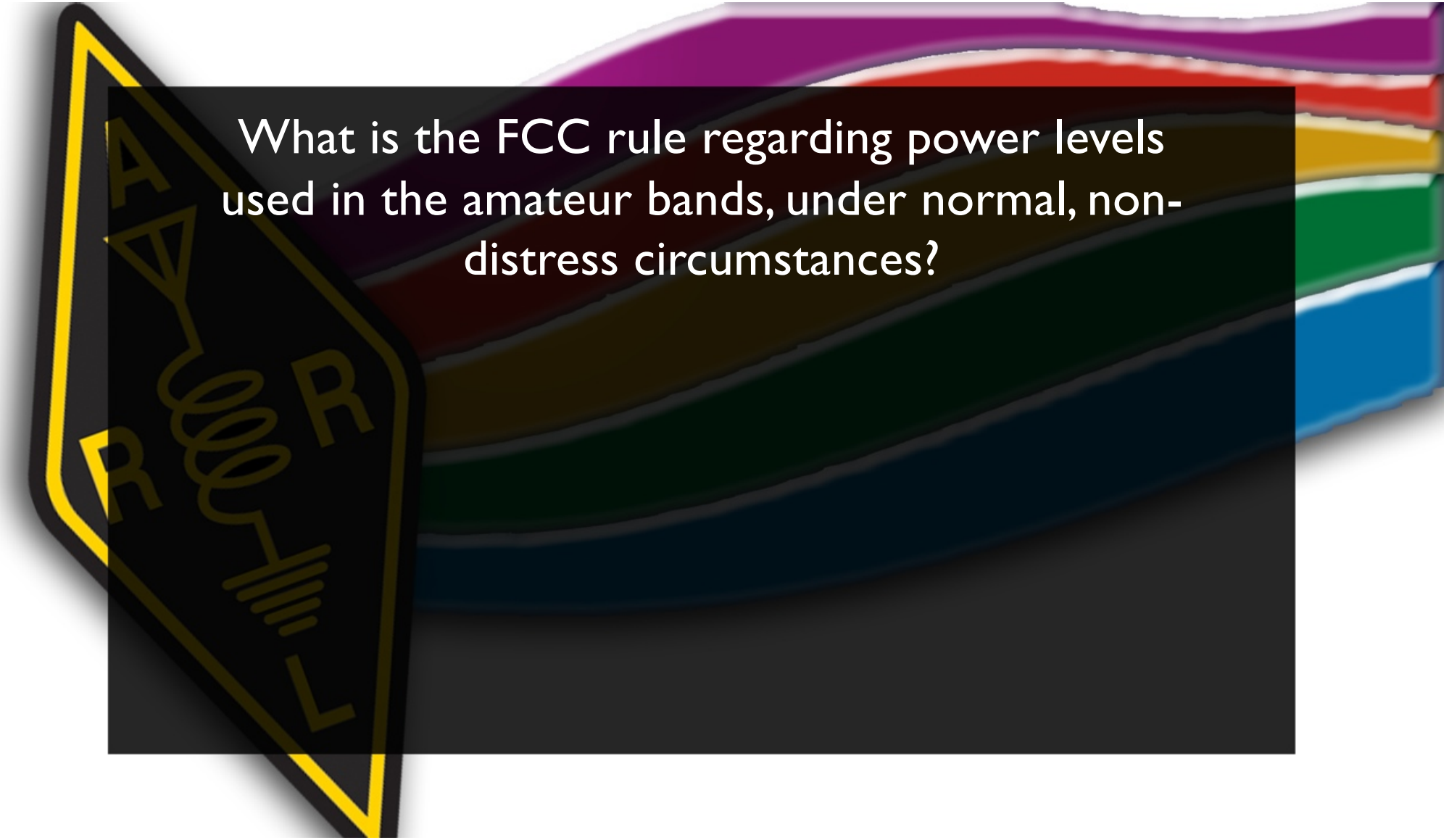

What emission modes may be used between
219 and 220 MHz?
Data


What is a band plan, beyond the privileges established by the FCC?

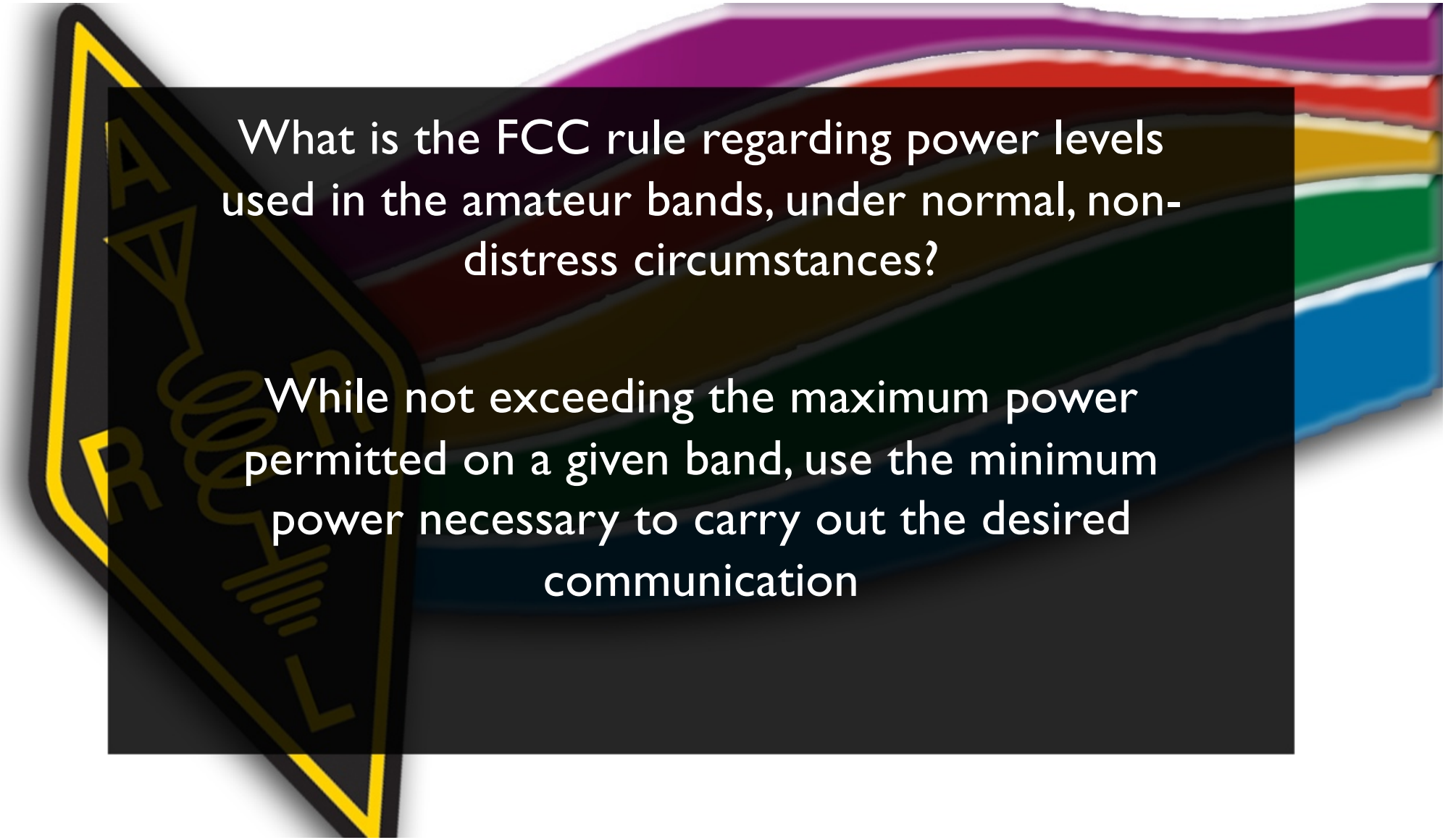


What is a band plan, beyond the privileges established by the FCC?

A voluntary guideline for using different modes or activities within an amateur band



What is the FCC rule regarding power levels used in the amateur bands, under normal, non-distress circumstances?



What is the FCC rule regarding power levels used in the amateur bands, under normal, non-distress circumstances?

While not exceeding the maximum power permitted on a given band, use the minimum power necessary to carry out the desired communication


What is true regarding the use of SSB phone in amateur bands above 50 MHz?

What is true regarding the use of SSB phone in amateur bands above 50 MHz?

It is permitted in at least some portion of all the amateur bands above 50 MHz

Section 3 – International Rules

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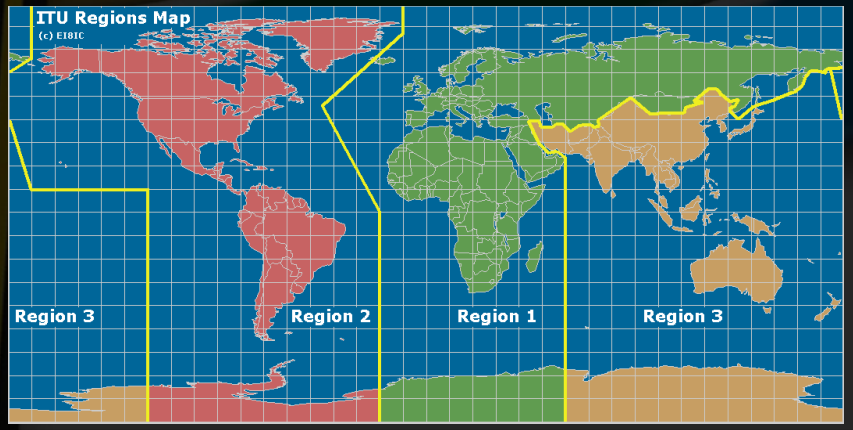
- International Telecommunication Union (ITU).



Section 3 – International Rules

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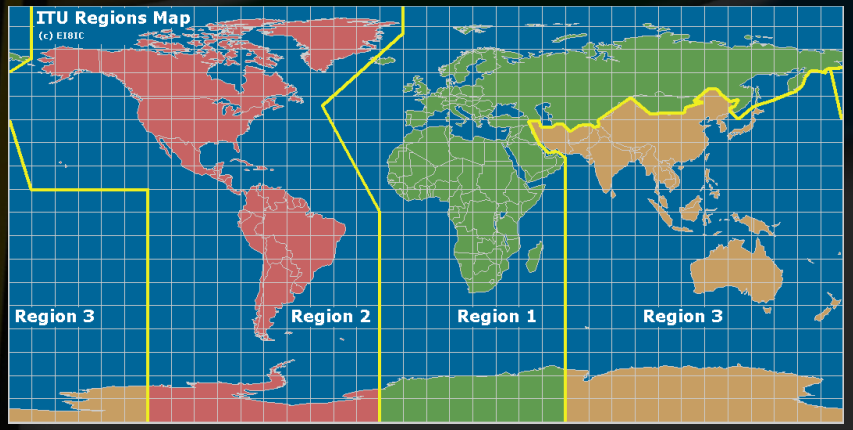

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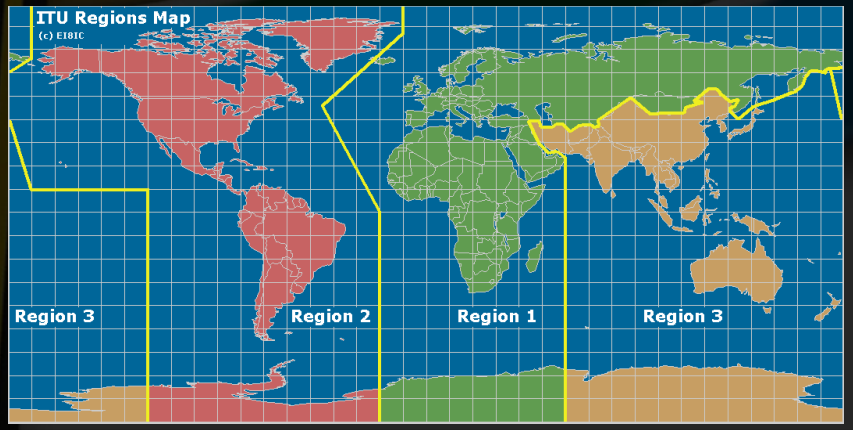
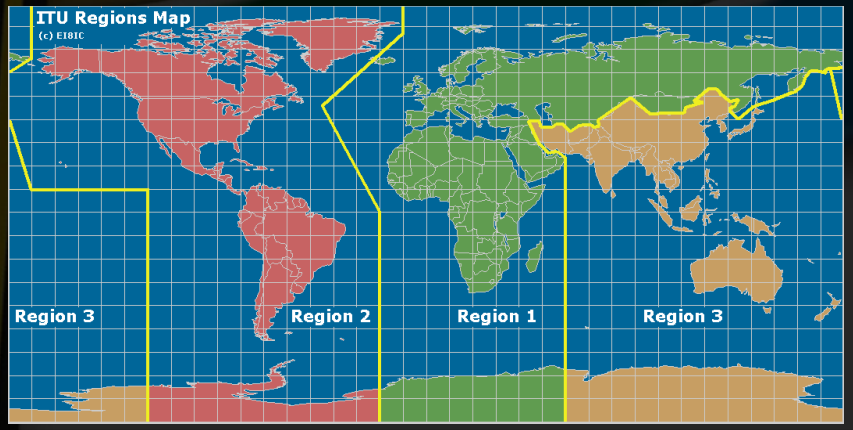


Section 3 – International Rules

- International Telecommunication Union (ITU).
  - Regions 1, 2 and 3
  - Continental US hams are in Region 2
  - Some Pacific possessions in Region 3




International Operating Authorization

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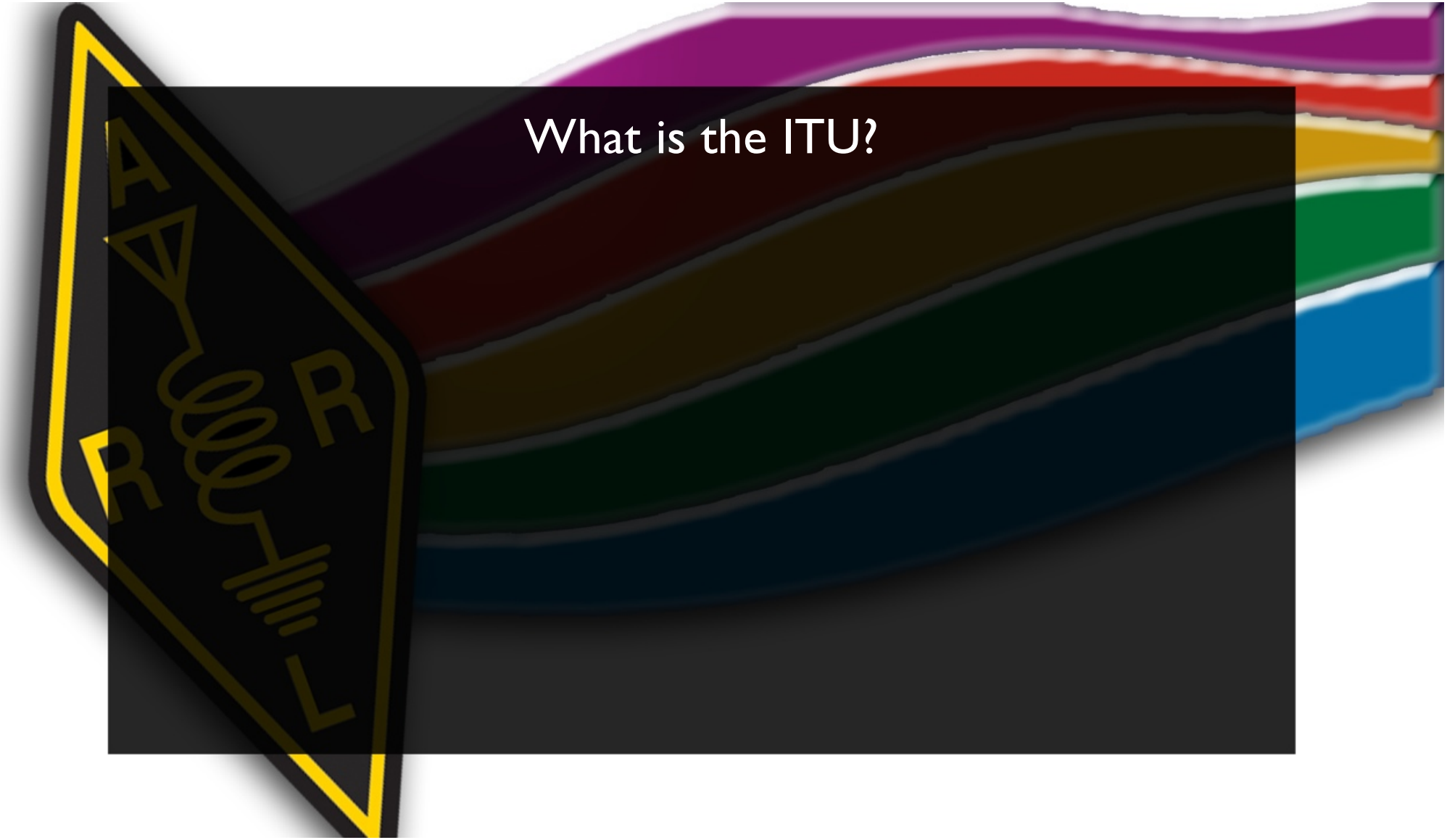
- May operate from US-flagged vessels
  - Host country's rules apply in territorial waters
- Contacts with other countries must be allowed by that country and by the US
  - Very rare for contacts to be prohibited!

Practice Questions


What is the ITU?

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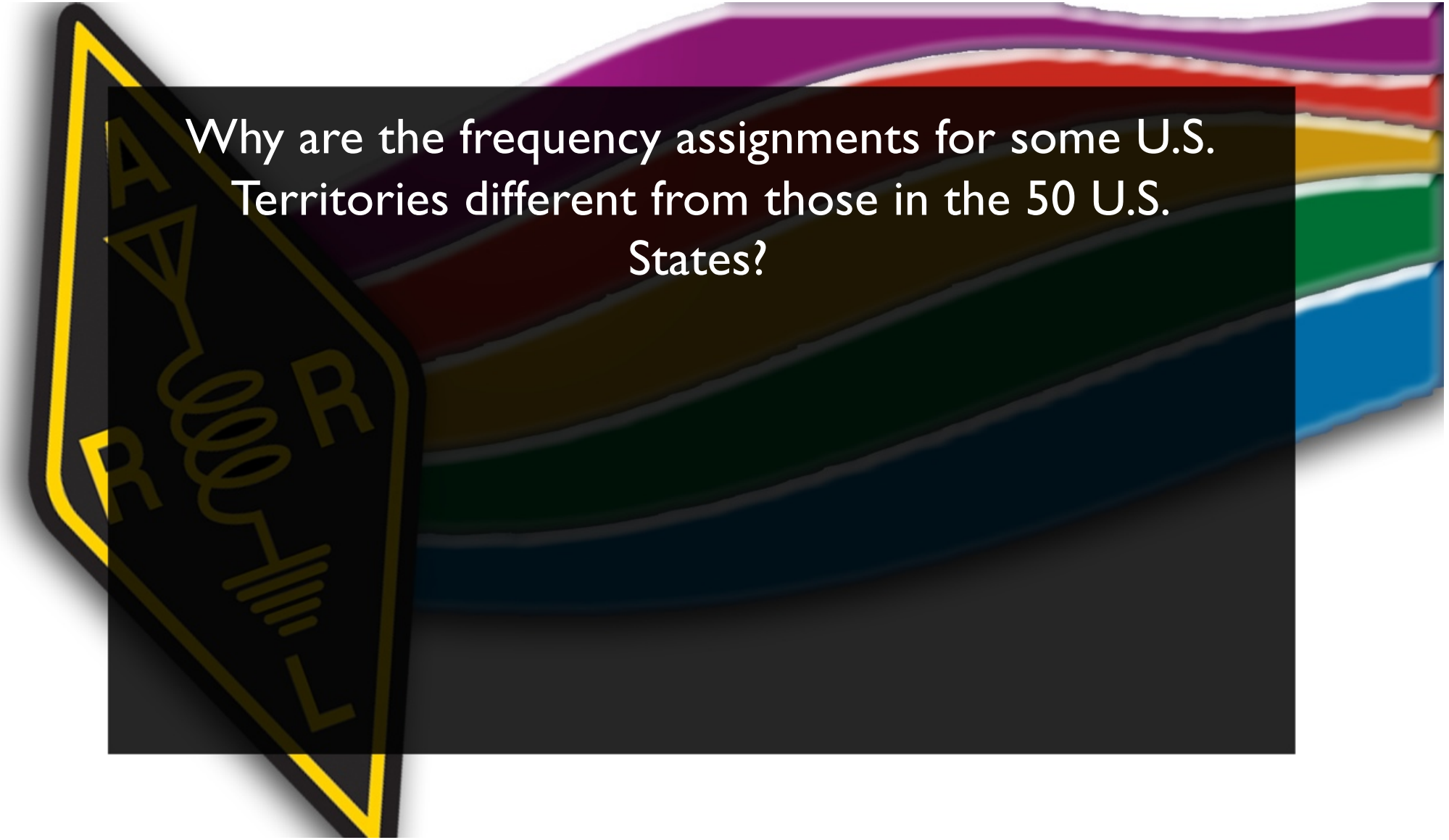
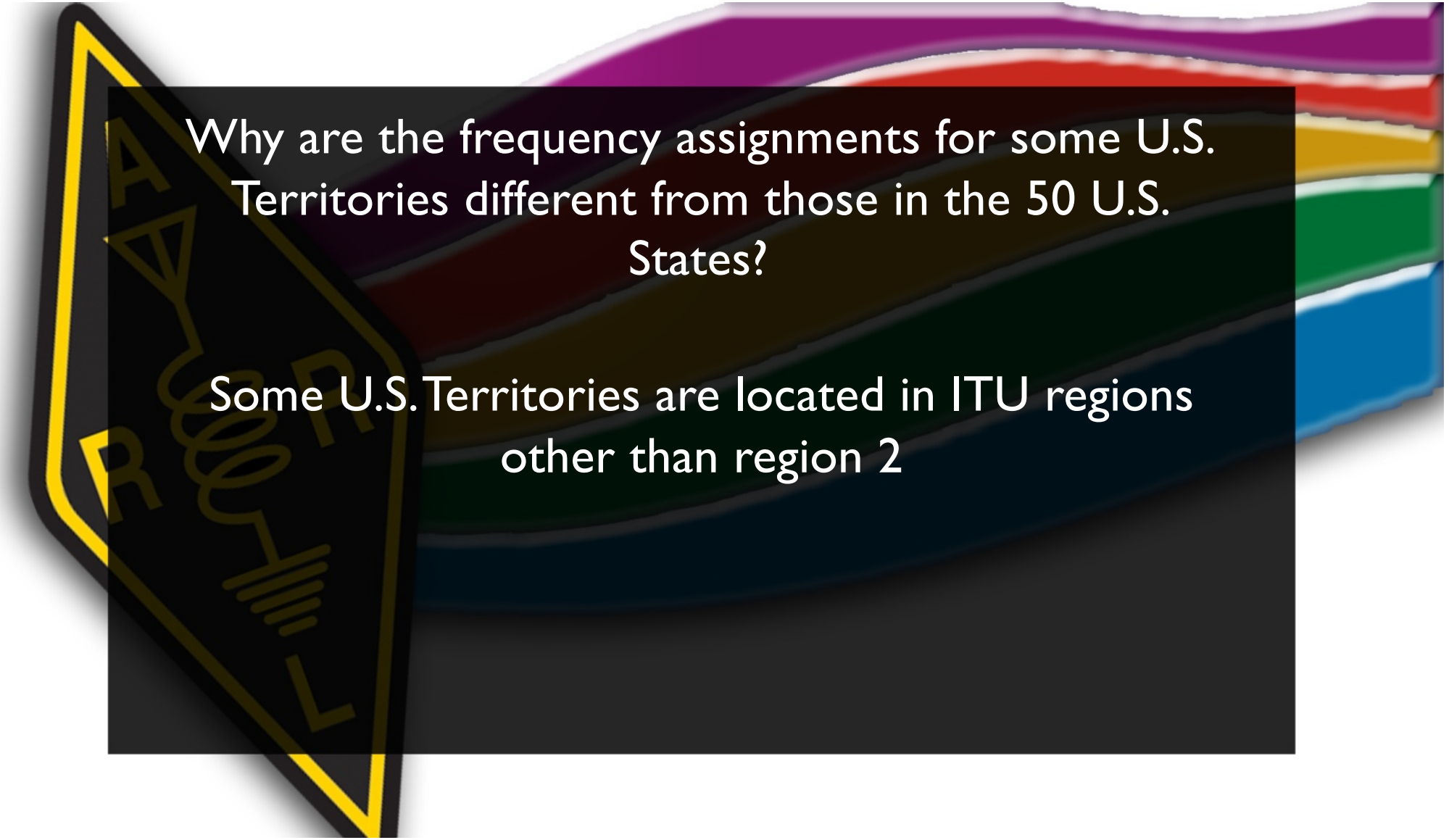
A United Nations agency for information and communication technology issues


Why are the frequency assignments for some U.S. Territories different from those in the 50 U.S. States?



Why are the frequency assignments for some U.S. Territories different from those in the 50 U.S. States?

Some U.S. Territories are located in ITU regions other than region 2


What types of international communications are permitted by an FCC-licensed amateur station?

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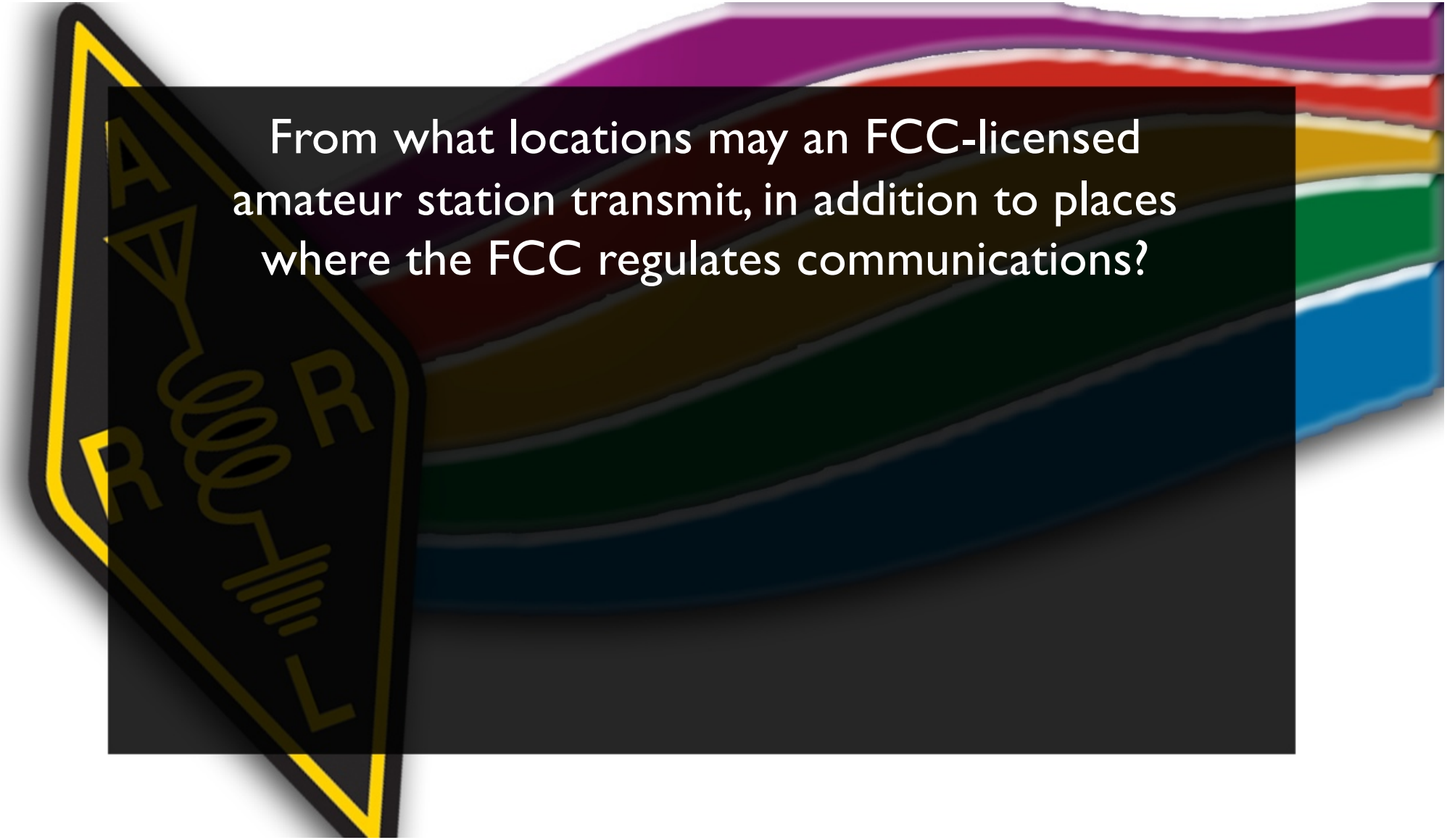
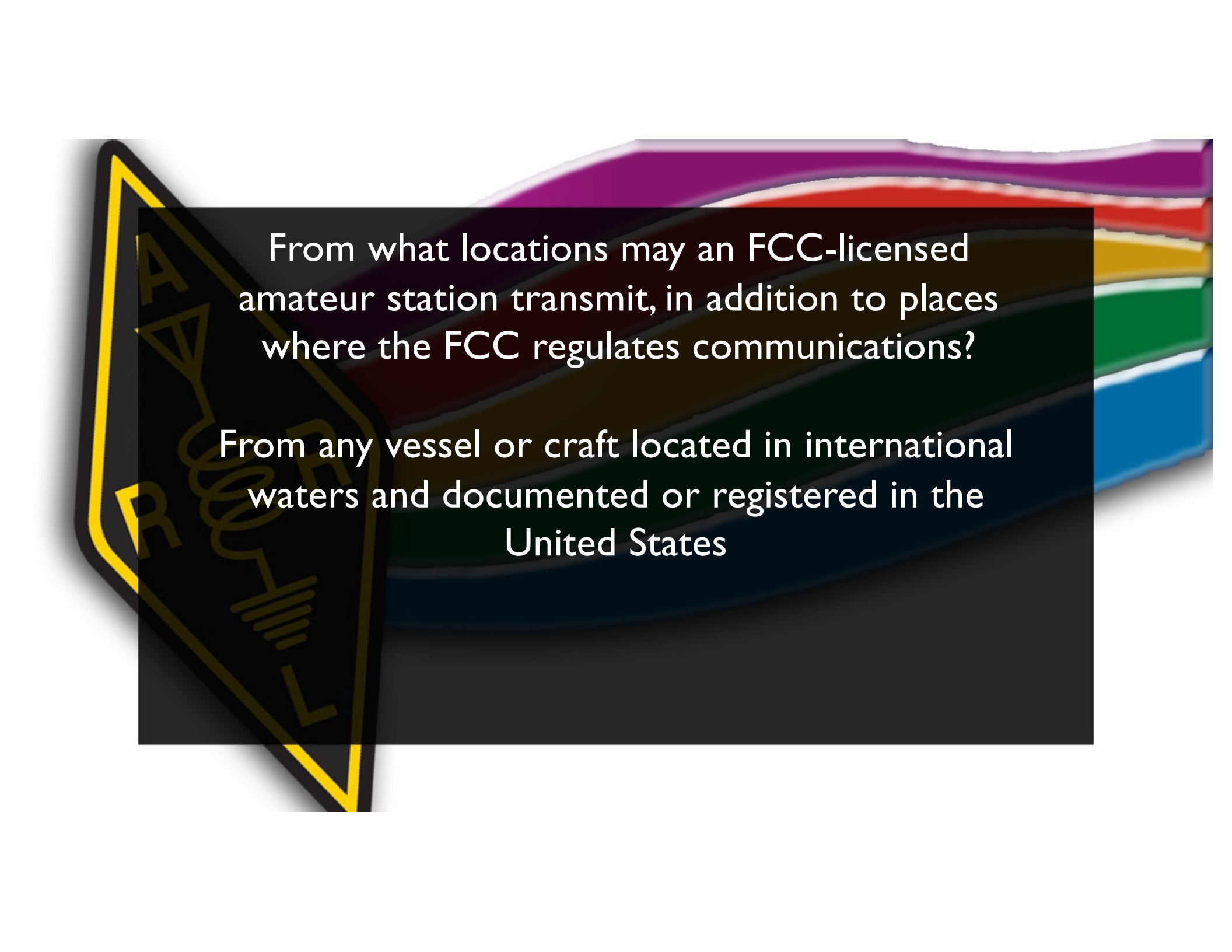
Communications incidental to the purposes of the amateur service and remarks of a personal character

When are you allowed to operate your amateur station in a foreign country?

When are you allowed to operate your amateur station in a foreign country?

When the foreign country authorizes it


From what locations may an FCC-licensed amateur station transmit, in addition to places where the FCC regulates communications?


From what locations may an FCC-licensed amateur station transmit, in addition to places where the FCC regulates communications?
From any vessel or craft located in international waters and documented or registered in the United States

With which countries are FCC-licensed amateur stations prohibited from exchanging communications?

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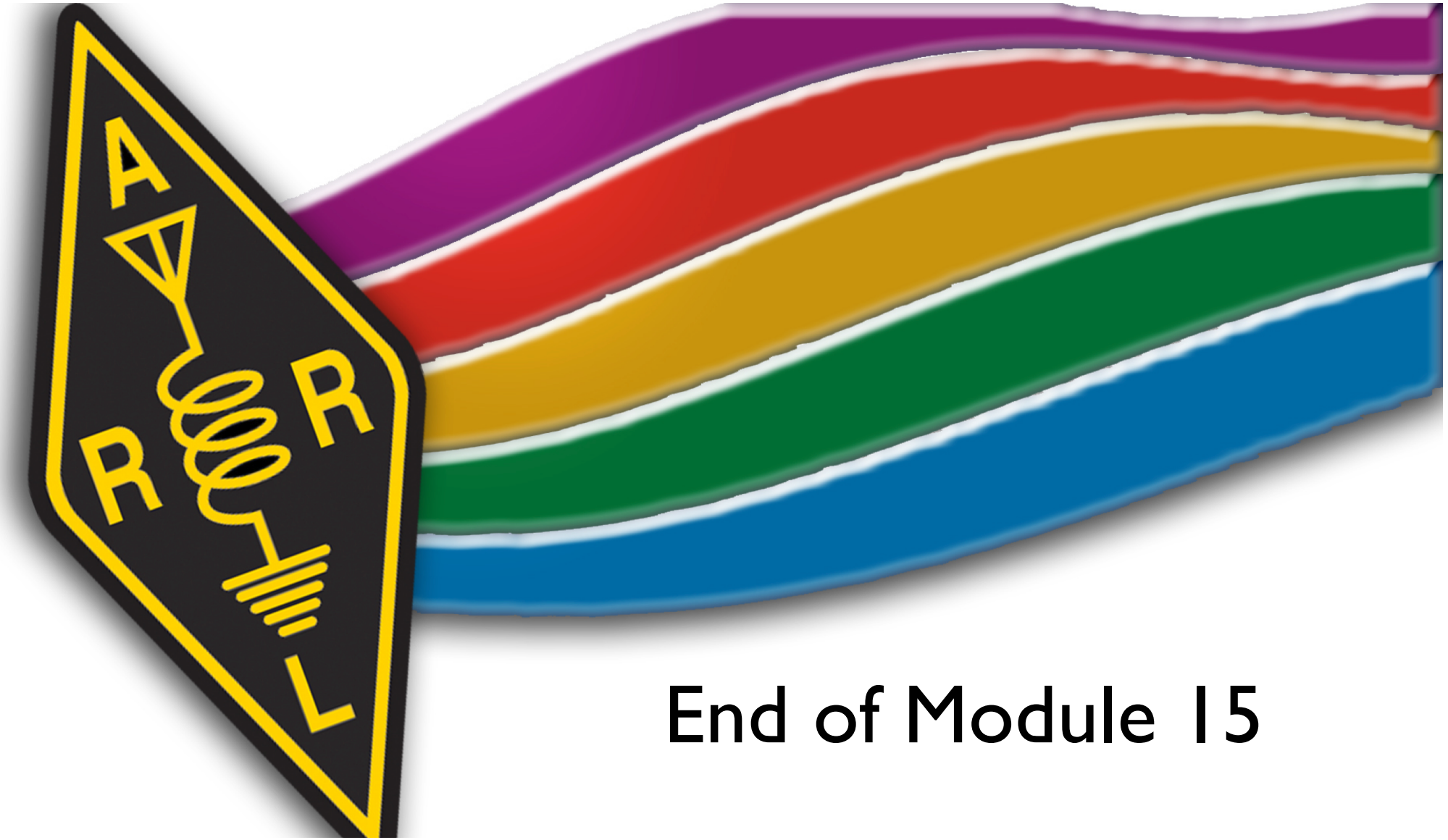
Any country whose administration has notified the ITU that it objects to such communications



End of Module 15