Antenna

PK	antenna_number
	beamwidth
	gain
	height_above_average_terrain
	height_to_tip
	antenna_action_performed

Uses Antennas

License

PK	unique_system_identifier
	name
	email
	street_address
	city
	state

Uses Paths

Uses Locations

Path

PK	path_number
	transmit_location_number
	receiver_location_number
	transmit_antenna_number
	receiver_antenna_number
	path_type_desc

Locations

PK	location_number
	location_address
	location_city
	location_county
	location_state
	id

specifies

Coordinate

PK	id
	lat_degrees
	lat_minutes
	lat_seconds
	lat_direction
	long_degrees
	long_minutes
	long_seconds
	long_direction

ER Diagram Description:

A path represents a radio communications path with references to both the transmit and receiver locations and antennas. There is also a path_type_desc attribute that tells the type of path. A path can be uniquely identified using its unique_system_identifier and its path_number. The identifier is used by the FCC to uniquely identify each license.

A license represents a registered communications license. The license is identified by its unique_system_identifier and has attributes name, email, street_address, city, and state. A license can have multiple associated paths, locations, and antennae.

The location table represents a location of transmission and/or a location of reception for a path. Each entry can be identified using the associated license and location number. It has the attributes location_address location_city, location_county, and location_state.

The antenna represents the properties of antennas used within a license. Each entry can be identified from its associated license and an antenna number. It has attributes beam_width, gain, height_above_average_terrain, height_to_tip, antenna_action_performed.

The coordinate uses a unique id to identify a set of latitude and longitude coordinates. For both latitude and longitude, we have attributes for degrees, minutes, seconds, and direction. A location must be associated with a coordinate, and a coordinate can be associated with 0 or many locations.

Relational Schema:

License(unique_system_identifier: INT [PK], name:VARCHAR(100), email:VARCHAR(100), street_address:VARCHAR(255), city:VARCHAR(100), state:VARCHAR(20))

Path(path_number:INT [PK], unique_system_identifier:INT [foreign key to License.unique_system_identifier][PK], transmit_location_number:INT, receiver_location_number:INT, transmit_antenna_number:INT, receiver_antenna_number:INT, path_type_desc:VARCHAR(255))

Locations(location_number:INT [PK], unique_system_identifier:INT [foreign key to License.unique_system_identifier][PK], location_address:VARCHAR(100), location_city:VARCHAR(100), location_county:VARCHAR(100), location_state:VARCHAR(100), id:INT [foreign key to Coordinate.id])

Antenna(antenna_number:INT [PK], unique_system_identifier:INT [foreign key to License.unique_system_identifier][PK], beamwidth:DOUBLE, gain:DOUBLE, height_above_avg_terrain:DOUBLE, height_to_tip:DOUBLE, antenna_action_performed:char(1))

Coordinate(id:INT [PK], lat_degrees:DOUBLE, lat_minutes:DOUBLE, lat_seconds:DOUBLE, lat_direction:VARCHAR(10), long_degrees:DOUBLE, long_minutes:DOUBLE, long_seconds:DOUBLE, ong_direction:VARCHAR(10))