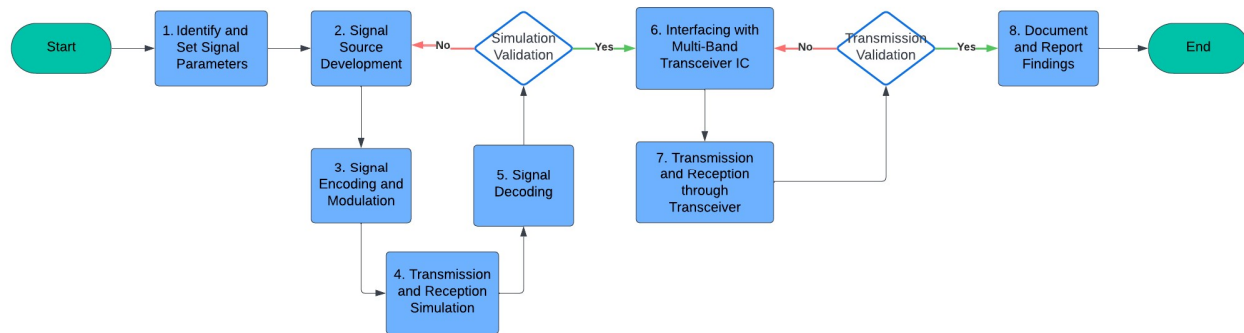# Workflow for generating ADS-B, 900MHz ISM and RemoteID signals:

1. Identify and Set Signal Parameters –

   Involves the study and identification of the specific attributes of each signal type: ADS-B, 900MHz ISM, and RemoteID signals. Understanding the frequency, modulation type, data frame structure, bandwidth, and any regulatory or compliance requirements for each signal.

2. Signal Source Development –

   Design and develop the signal source in MATLAB/LabVIEW. This involves creating the necessary data frames and structures that conform to the specifications identified in Step 1.

3. Signal Encoding and Modulation –

   Encode and modulate the signal according to the specific requirements of each signal type. Major activities include implementation of encoding schemes in MATLAB and verification.

4. Transmission and Reception Simulation –

   Simulate the transmission and reception environment to mimic real-world and ideal conditions. Will target to implement noise, interference, and signal attenuation models for real-world transmission simulation.

5. Signal Decoding –

   Decode the received signal according to signal type to extract the original message and verify its integrity. Validate the entire simulation process to ensure the message has been transmitted and received correctly. Identify any discrepancies in the encoding, modulation, transmission, or decoding stages. Refine and repeat the process from step 2, if necessary.

6. <u>Interfacing with Multi-Band Transceiver IC –</u>

   Interface the generated and verified signal with the multi-band transceiver for transmission and reception.

7. <u>Transmission and Reception through transceiver –</u>

   Validate the transmission and reception performance of the multi-band transceiver. Analyze the results and repeat from step 6, if necessary.

8. <u>Document and Report Findings –</u>

   After successful signal generation, simulation, and hardware testing, document the methodology and issues and report the findings.