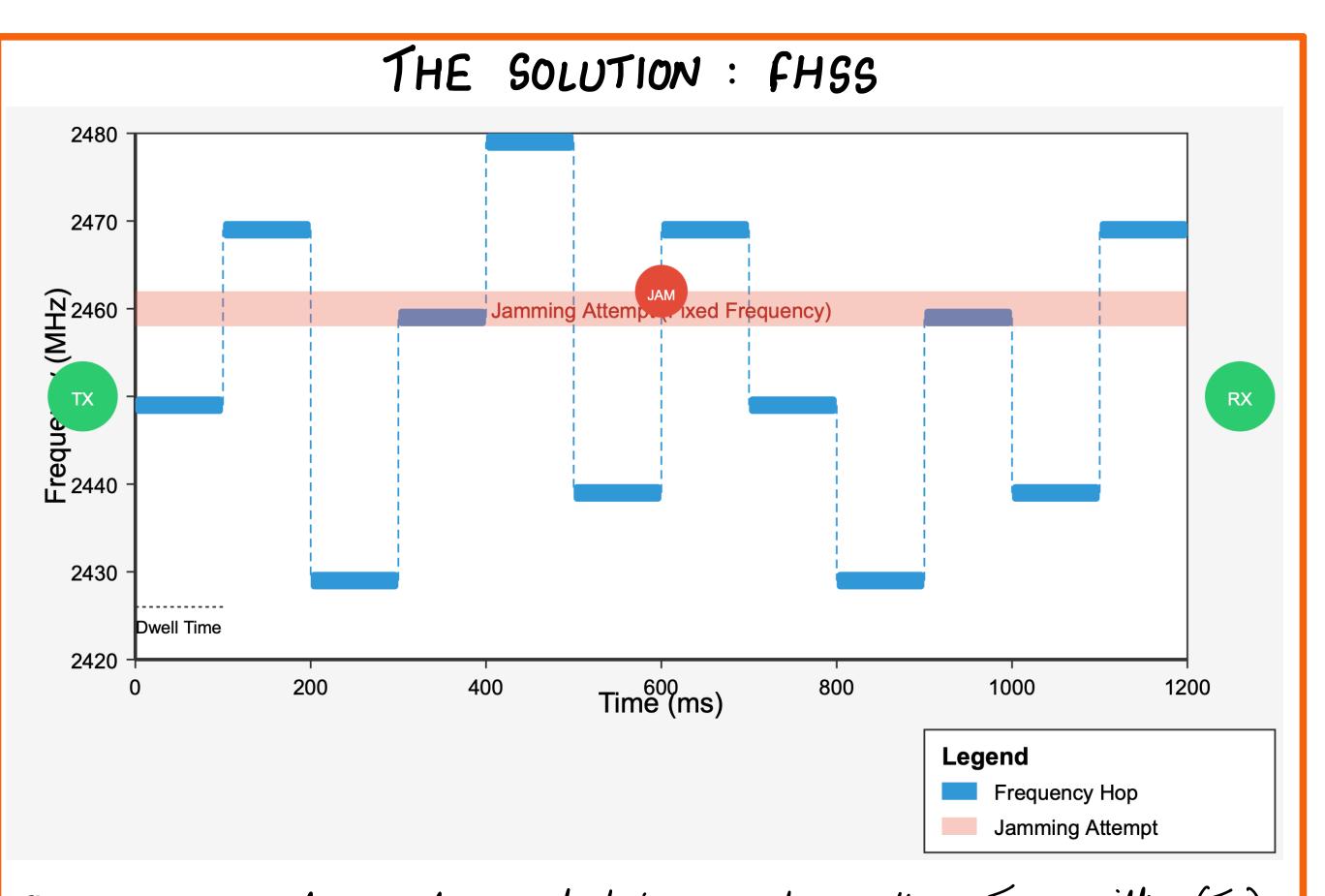


An intruder sends a signal at the same frequency of the communication system to interfere with radio frequency. For example, someone could jam GPS signals preventing your devices from displaying your route accurately.

SIMULATION PARAMETERS

* 10 frequencies from 2.49Hz to 2.69Hz (ISM band) * Slow hopping: One freq. per bit duration (1ms)



FHSS, a spread-spectrum technique where the Transmitter (Tx) rapidly switches frequencies in a pseudorandom sequence known to both Tx and Receiver (Rx).

MATHEMATICAL MODEL

The Tx'd signal for the nth hop interval is 3-

 $S(t) = A. \cos \left(2\pi f_n t + \phi\right). d(t)$

where,

 $f_n \in \{f_1, f_2, ..., f_N\} \rightarrow hopping frequencies$ $<math>d(t) \in \{0, 1\} \rightarrow digital data$ $<math>\phi \rightarrow phase (assumed constant)$

Hopping sequence is pseudorandom but synchronized between the Tx and Rx.

WHY FHSS ?

- 1. Resistant to novvowband interference/jamming i.e., if one frequency is jammed, only a few bits are lost.
- 2. Low probability of interseption Without knowing the hopping sequence, an eavesdropper cannot reconstruct the signal.

