

The FP7 COGEU TV White Space Radio Transceiver

Paul Sutton

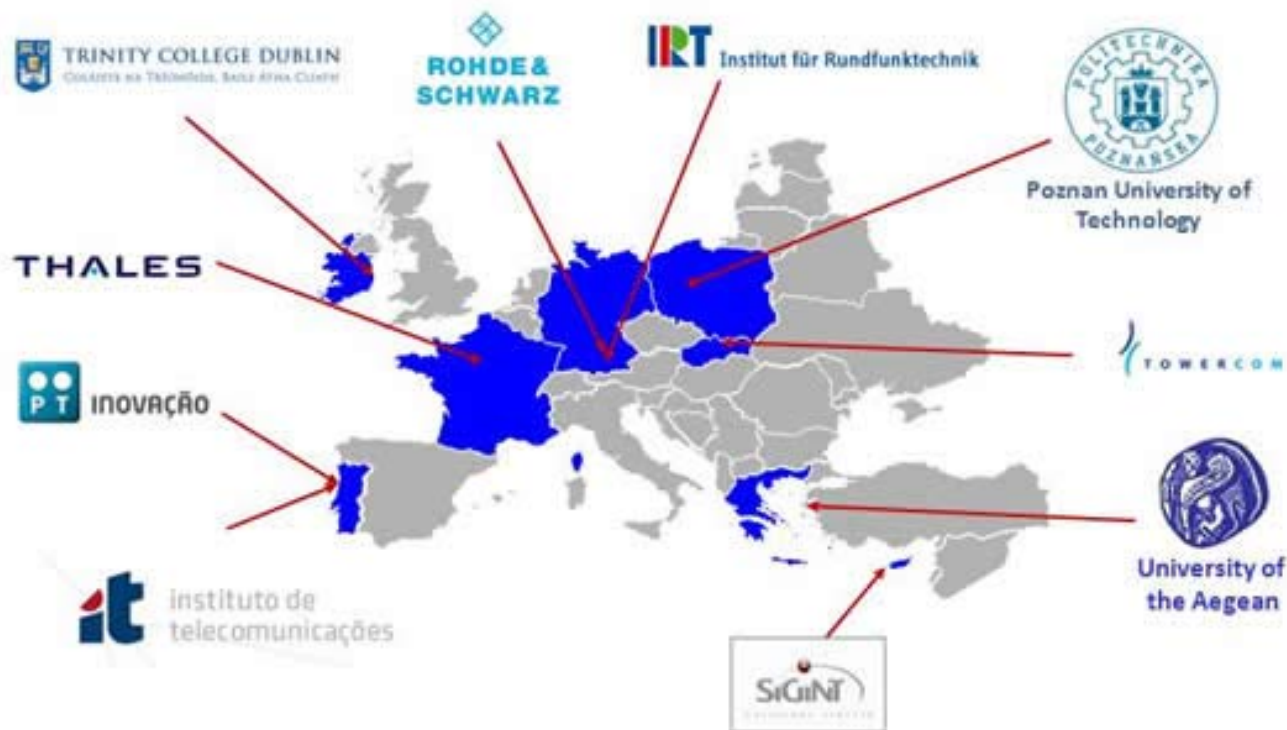
11th March 2014
SDR-WInnComm 2014

- Overview
- Key transceiver features
- Transceiver design
- Challenges

- Overview
- Key transceiver features
- Transceiver design
- Challenges



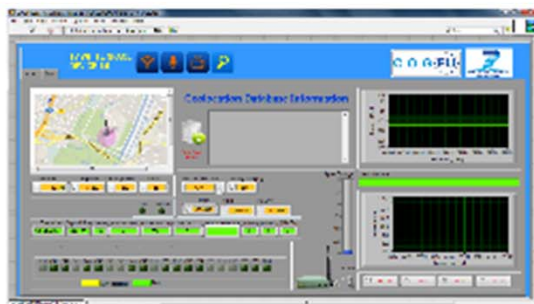
COGnitive radio systems for efficient sharing of TV white spaces in European context



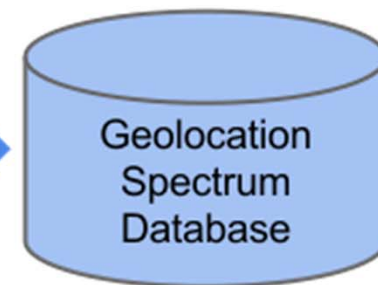




Spectrum Sensing and Database Lookup



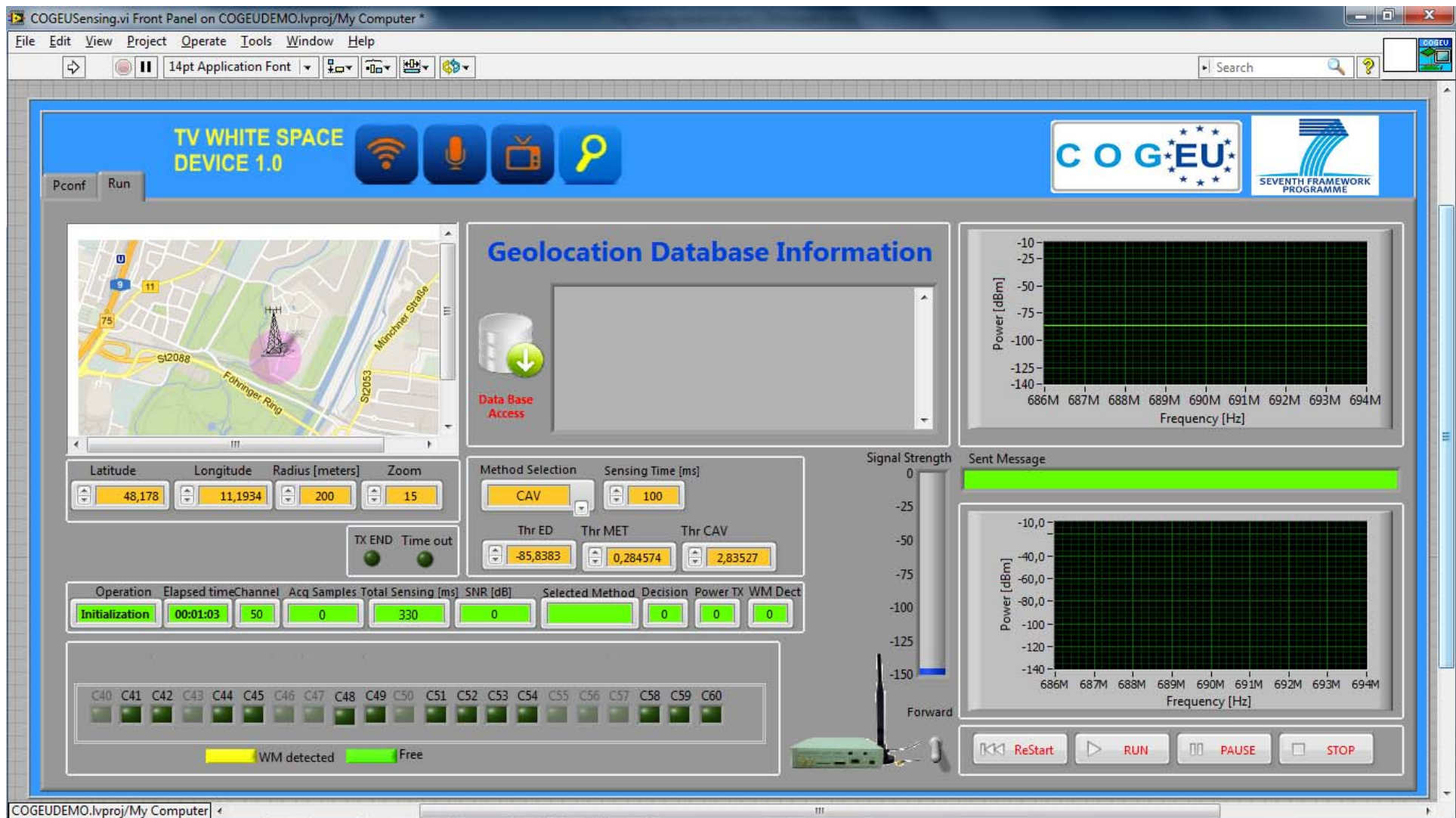
Geolocation
Spectrum
Database



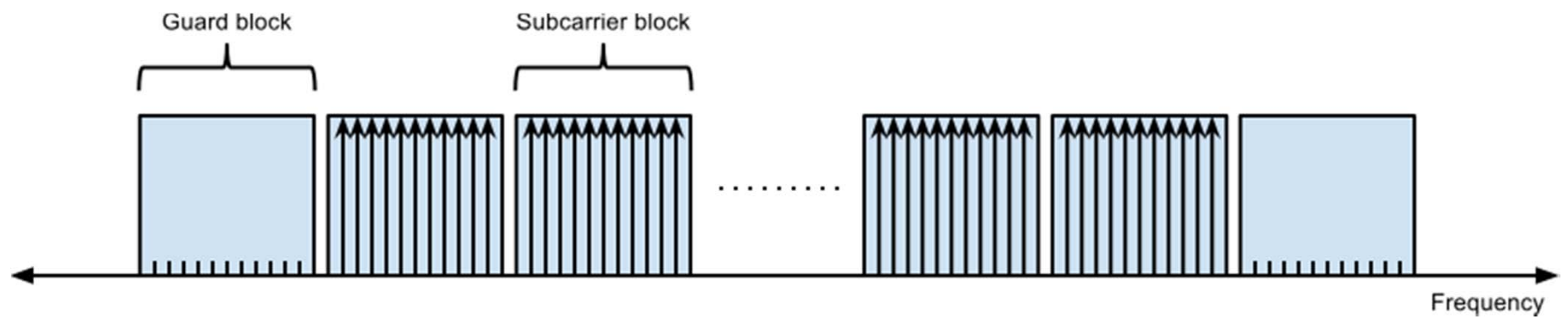
Transceiver

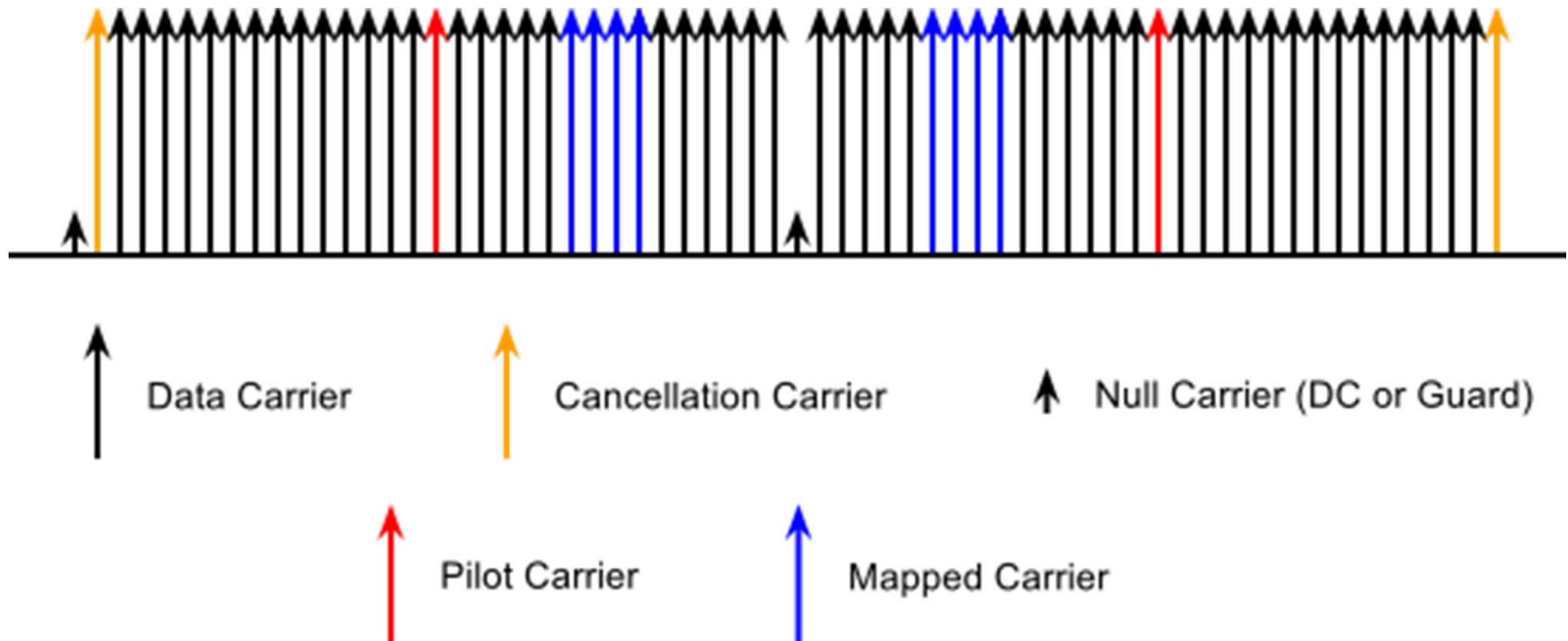
Tx

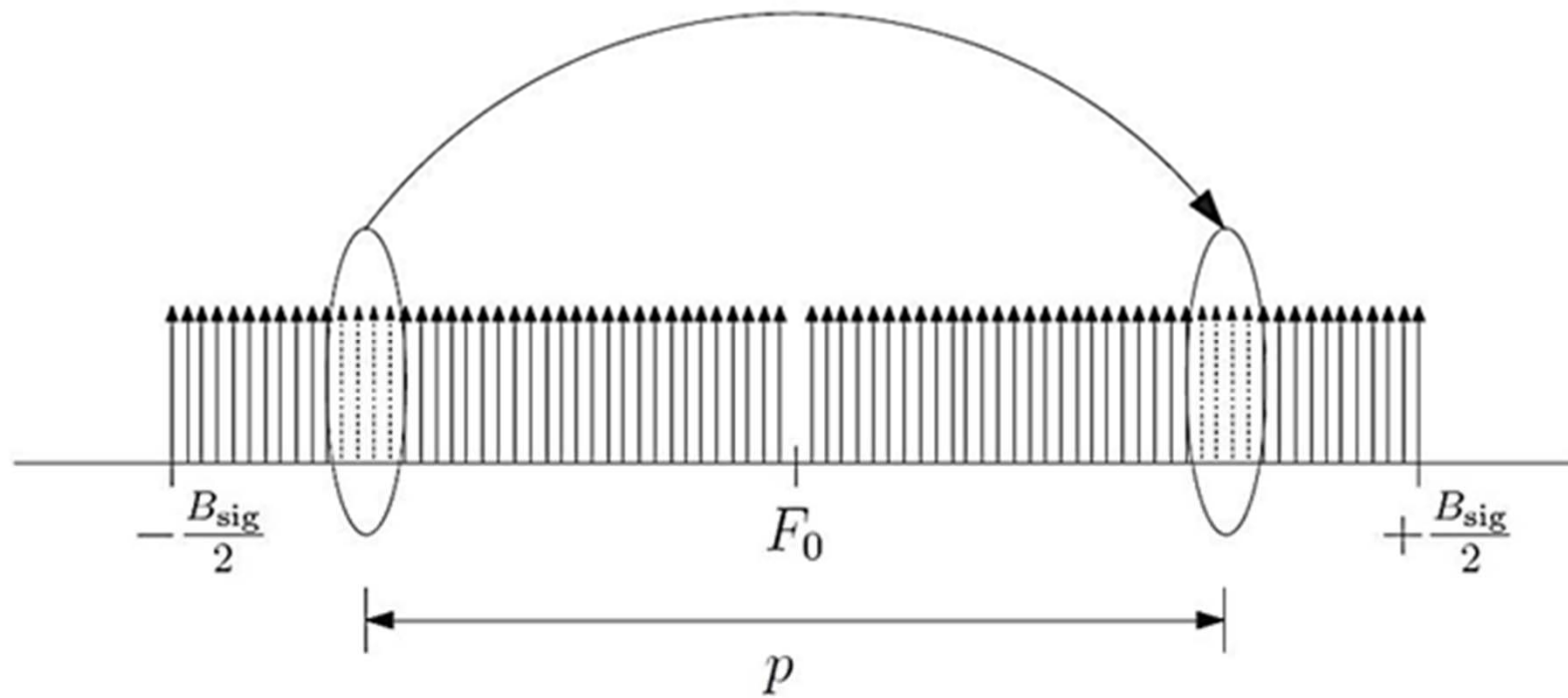
Rx

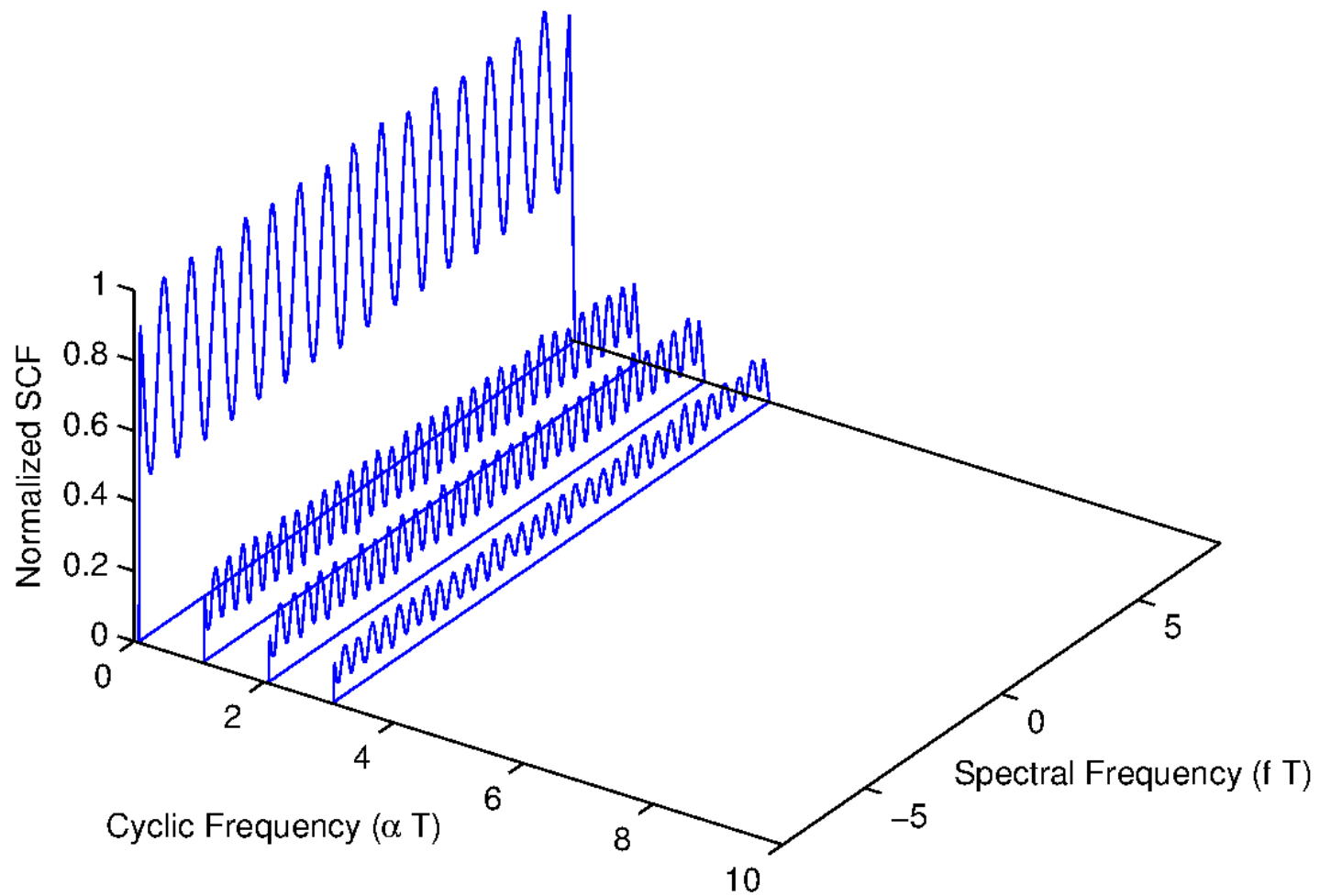


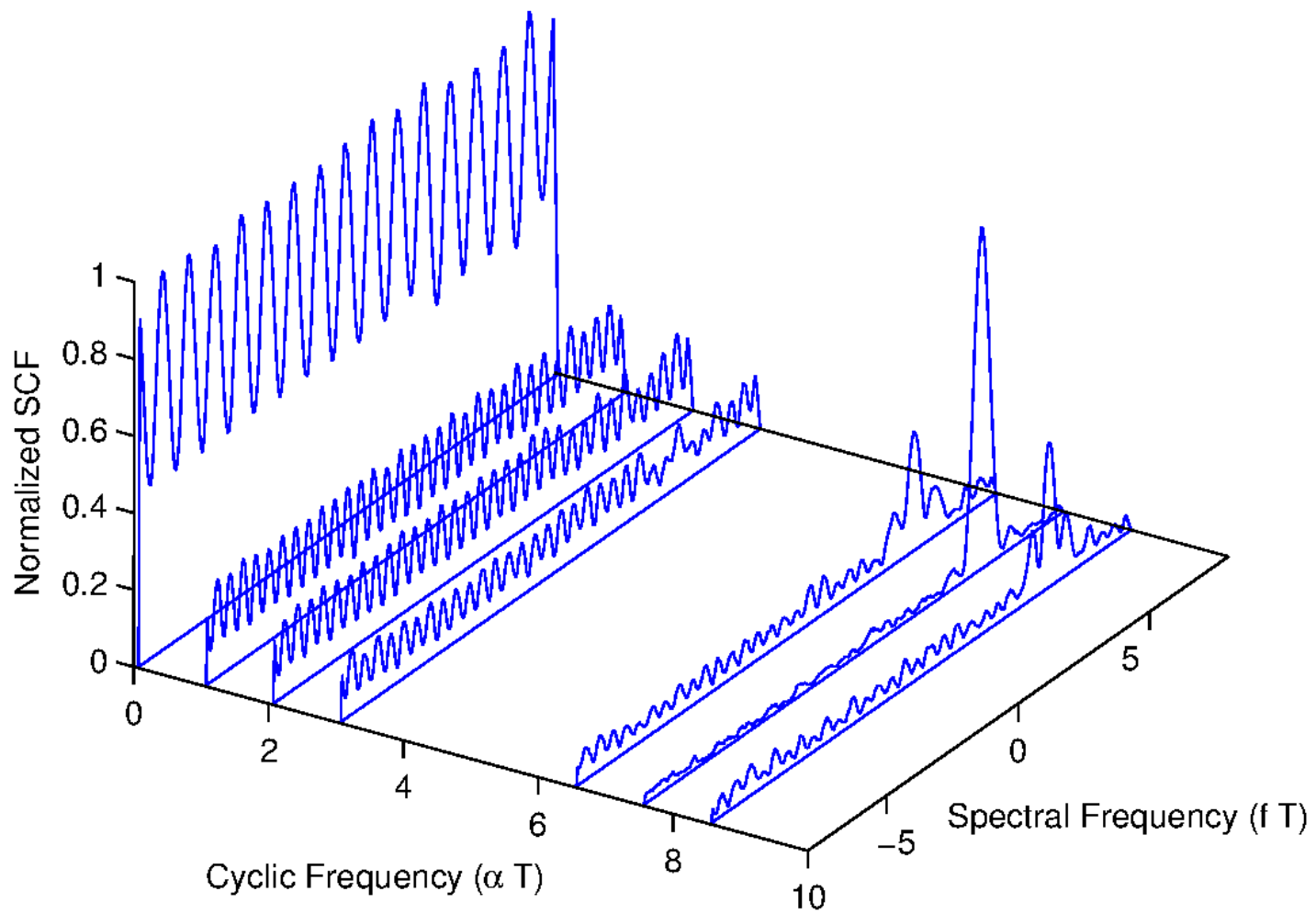
- Overview
- Key transceiver features
- Transceiver design
- Challenges







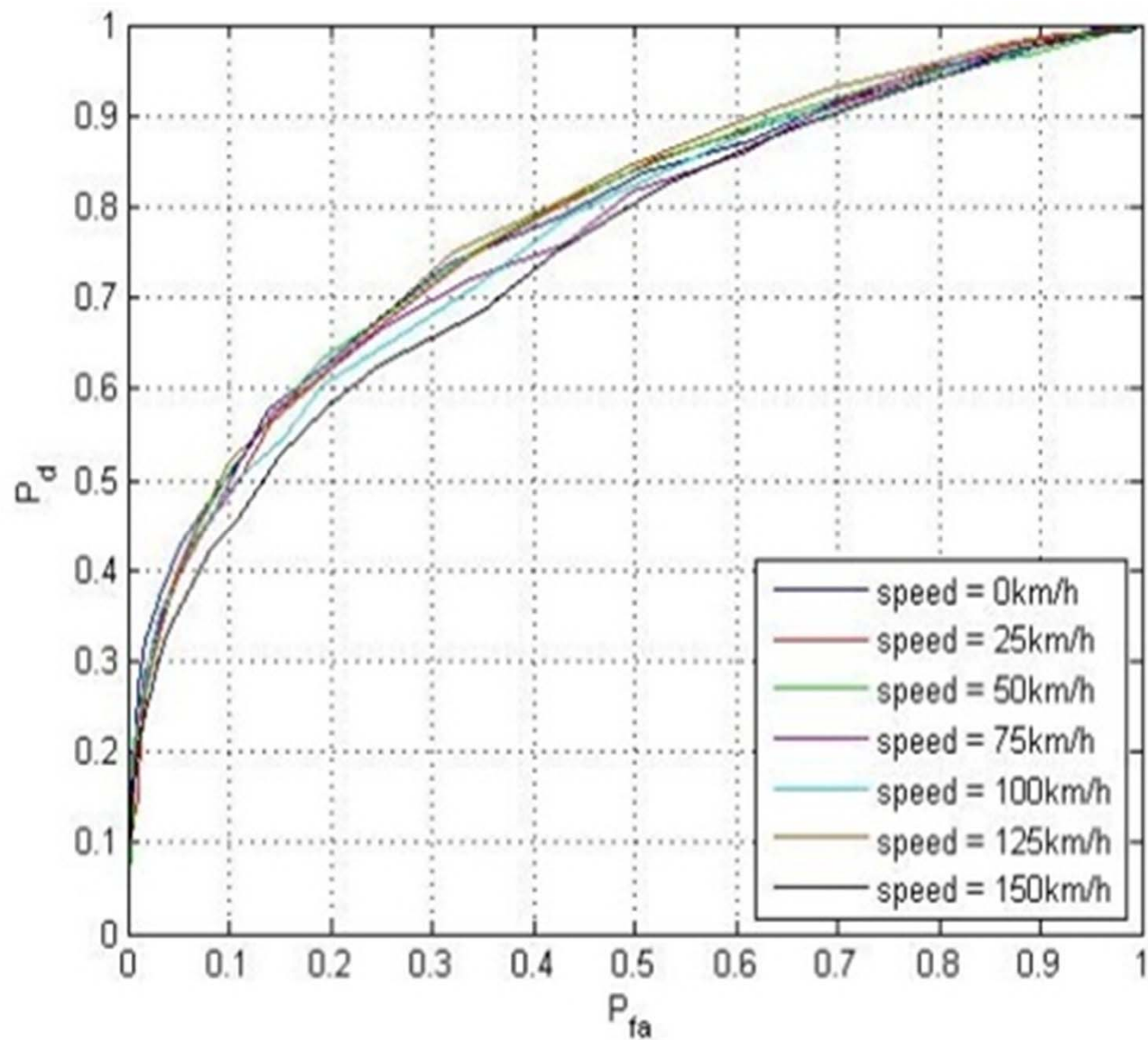


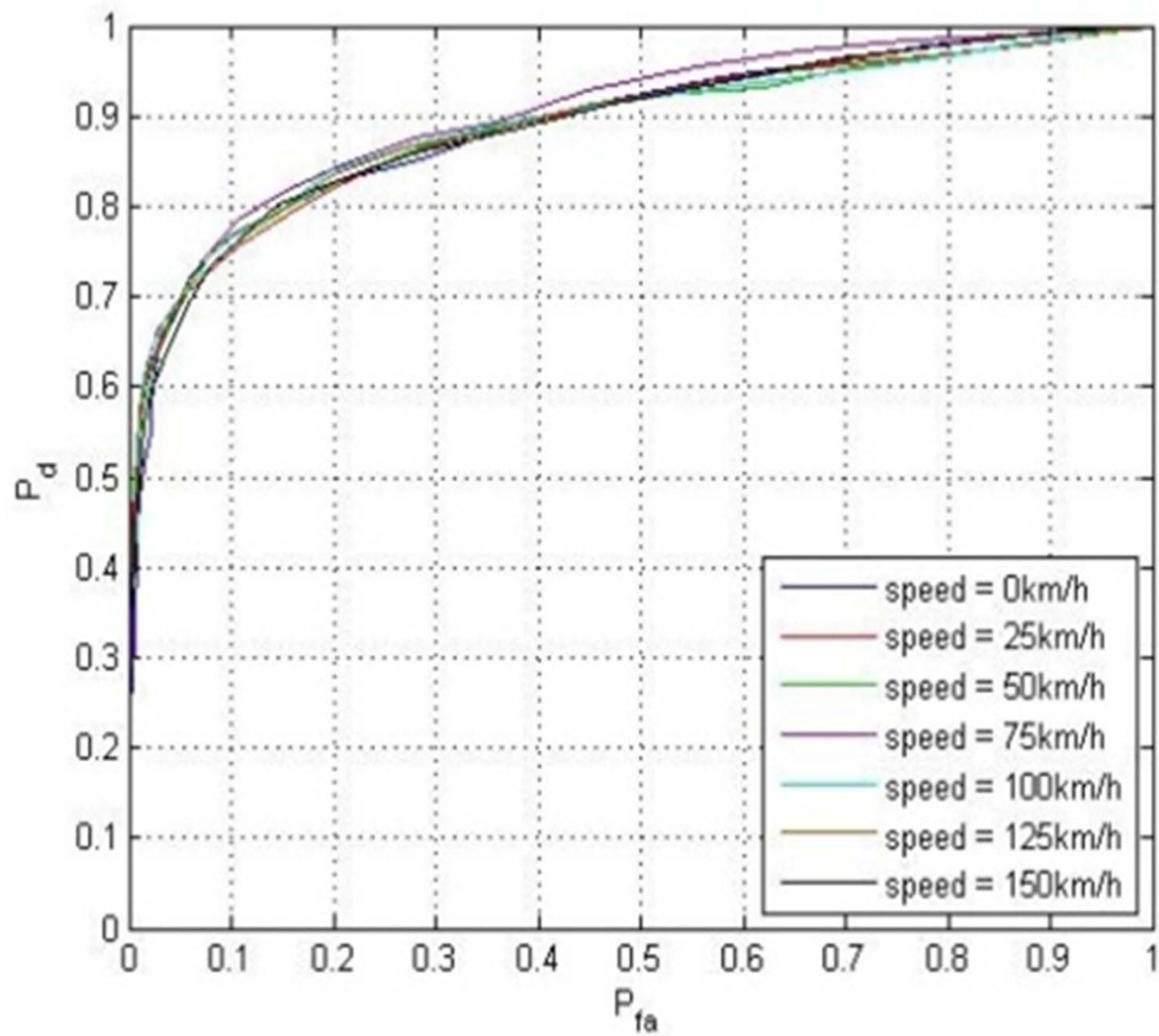


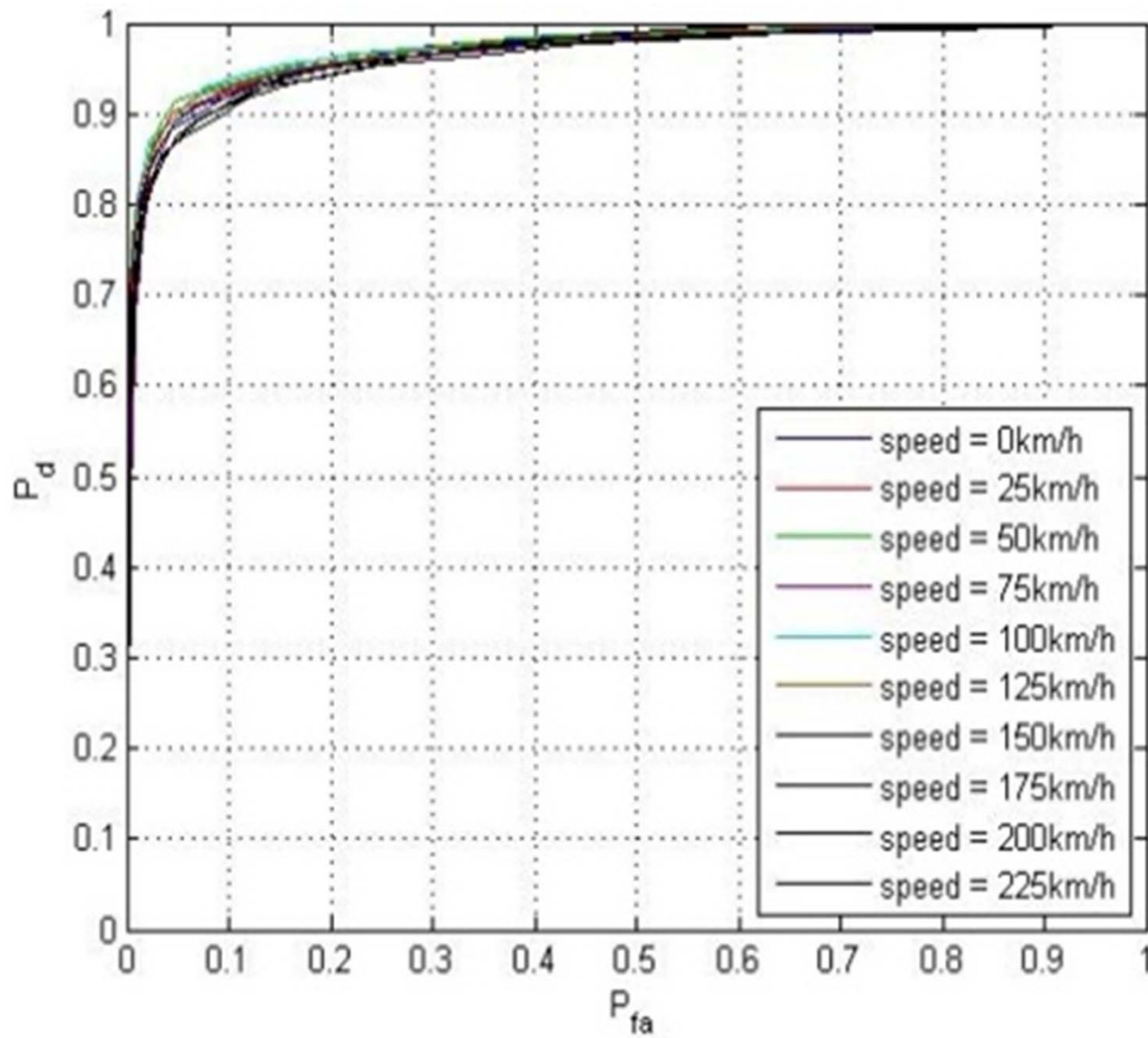
$$\hat{S}_x^\alpha[k] = \frac{1}{L} \sum_{l=0}^{L-1} X_l[k] X_l^*[k - \alpha] W[k]$$

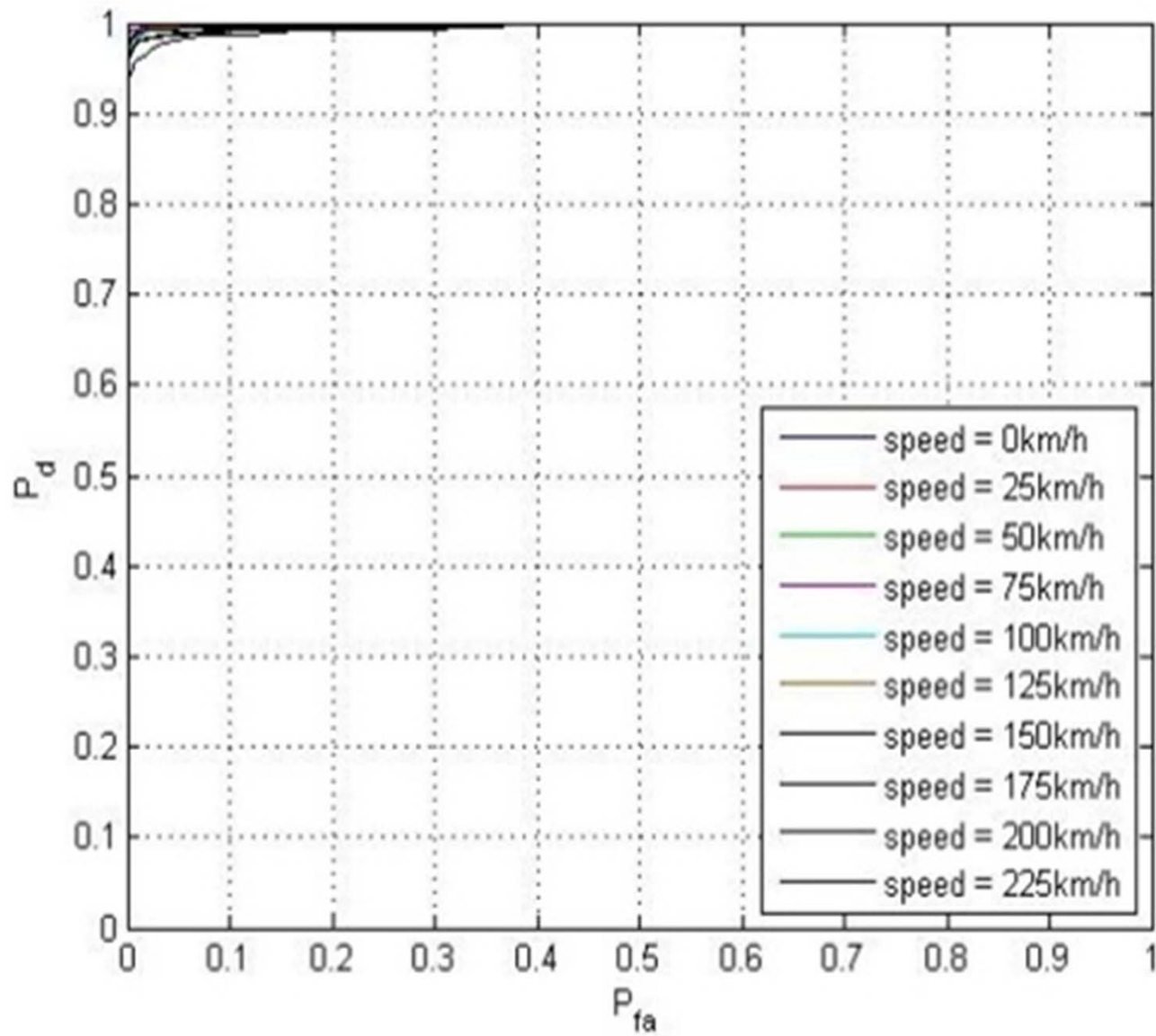
$$\hat{S}_x^\alpha[k] = \frac{1}{L} \sum_{l=0}^{L-1} X_l[k] X_l^*[k - \alpha] W[k]$$

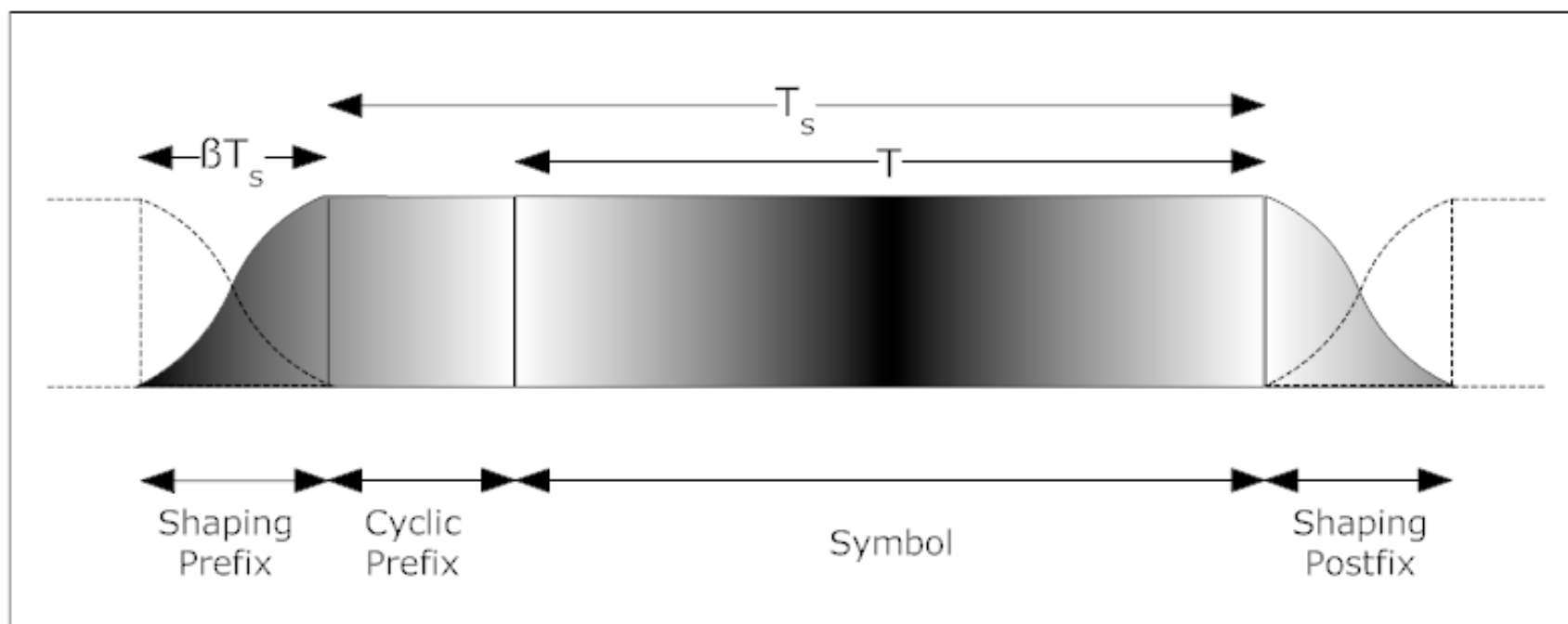
$$C_x^\alpha[k] = \frac{S_x^\alpha[k]}{(S_x^0[k + \alpha/2] S_x^0[k - \alpha/2])^{1/2}}$$

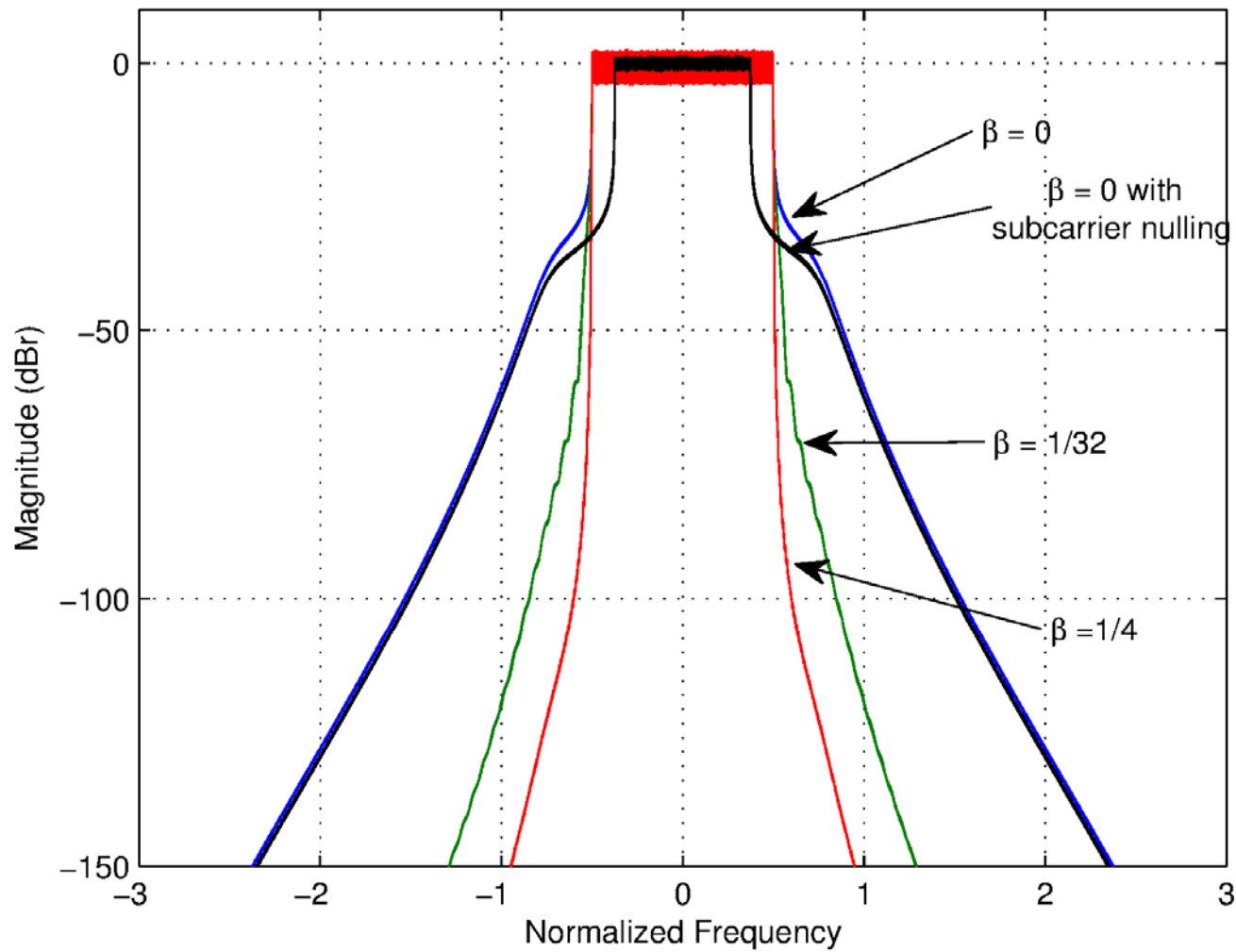


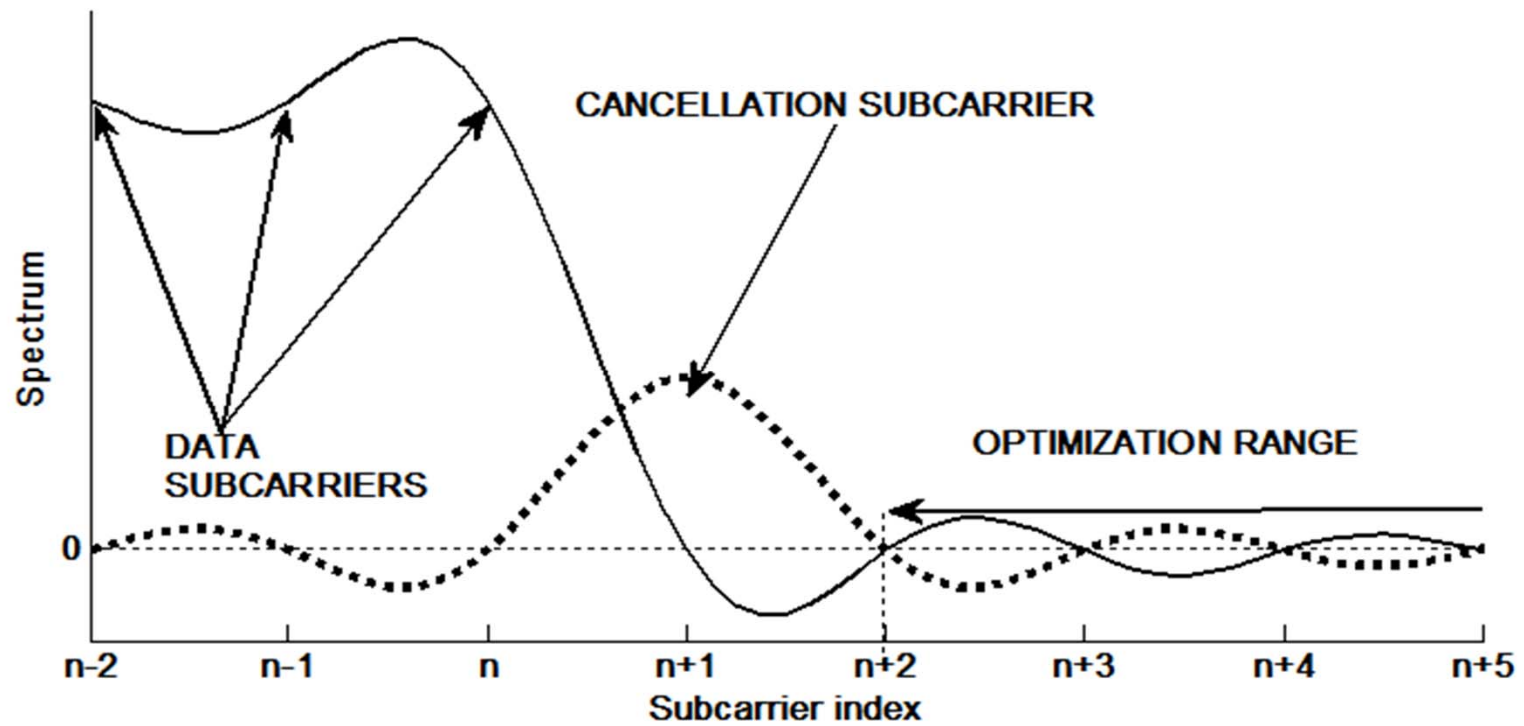


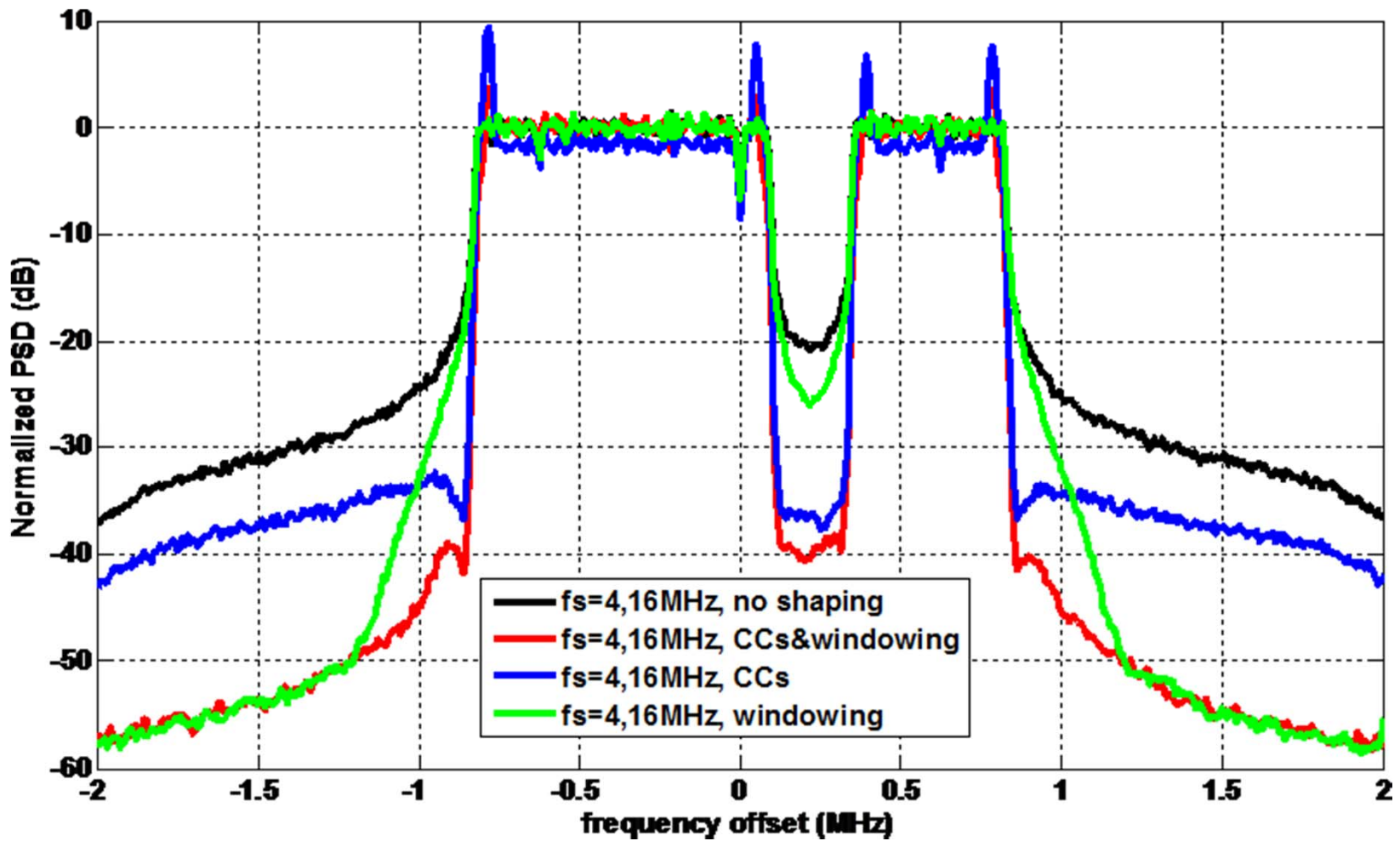




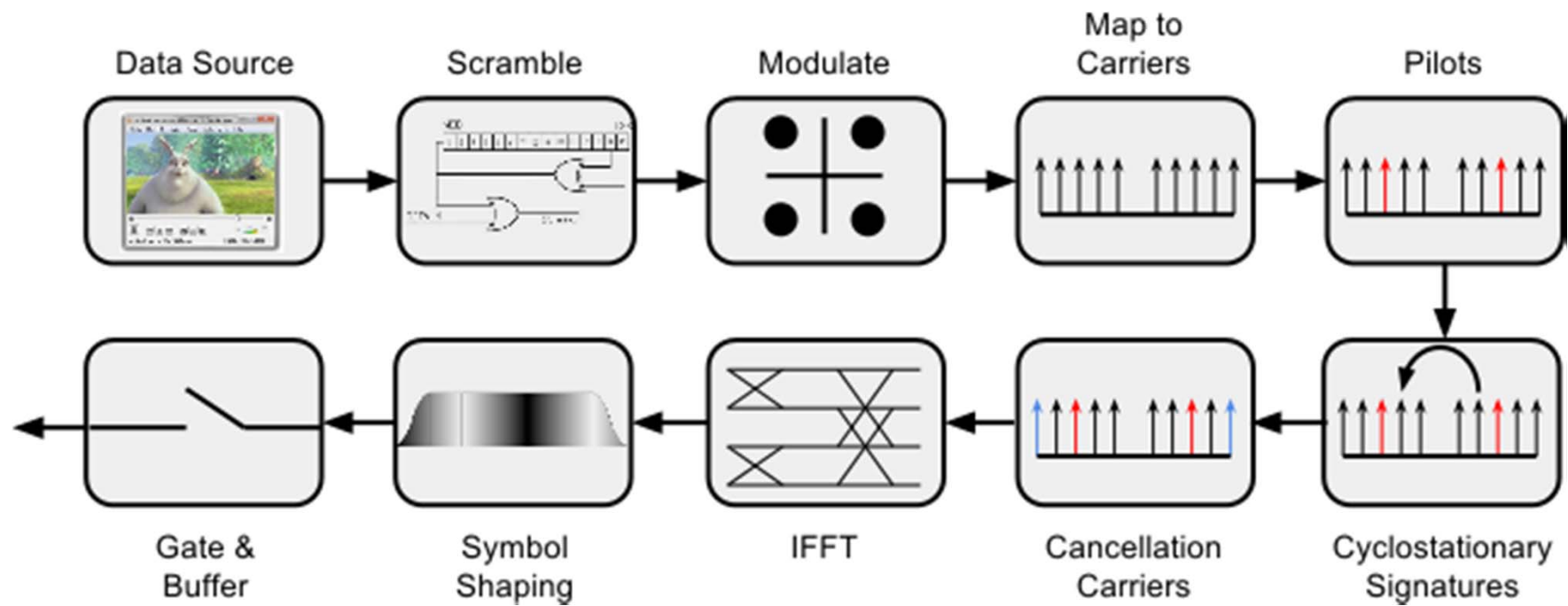


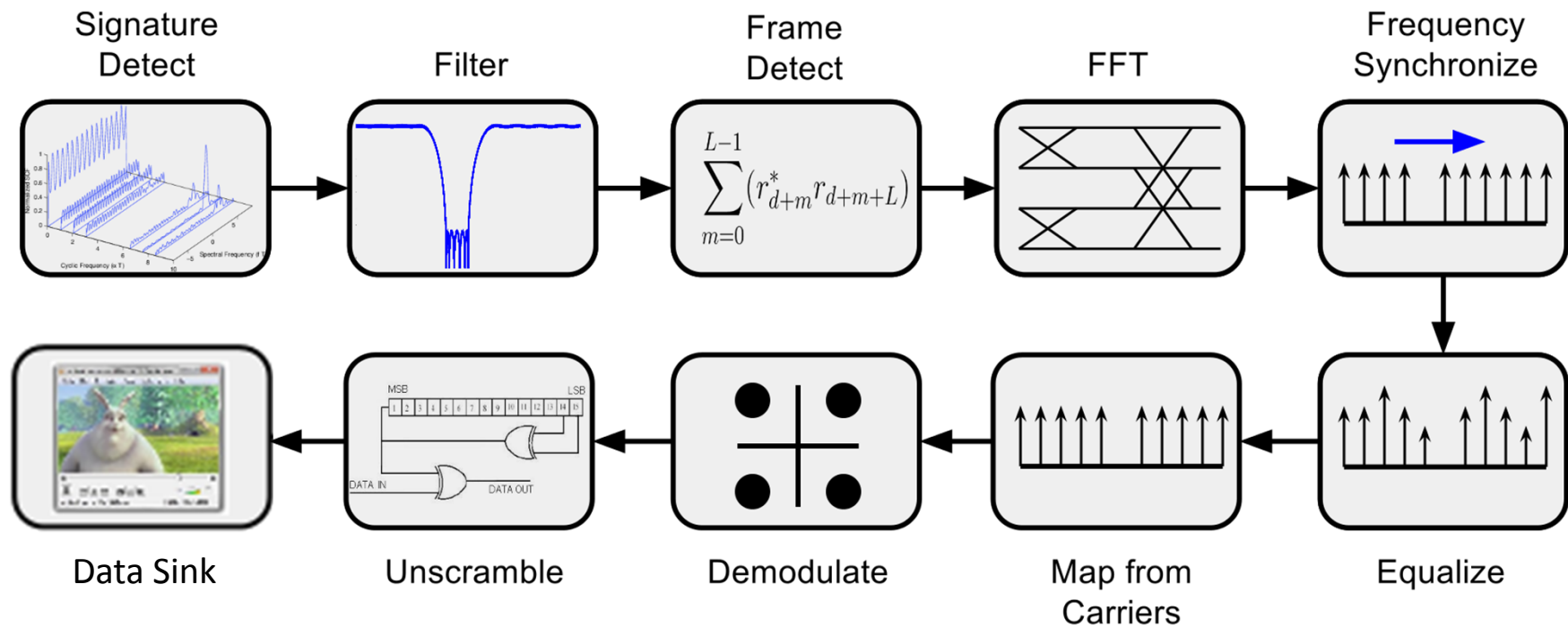




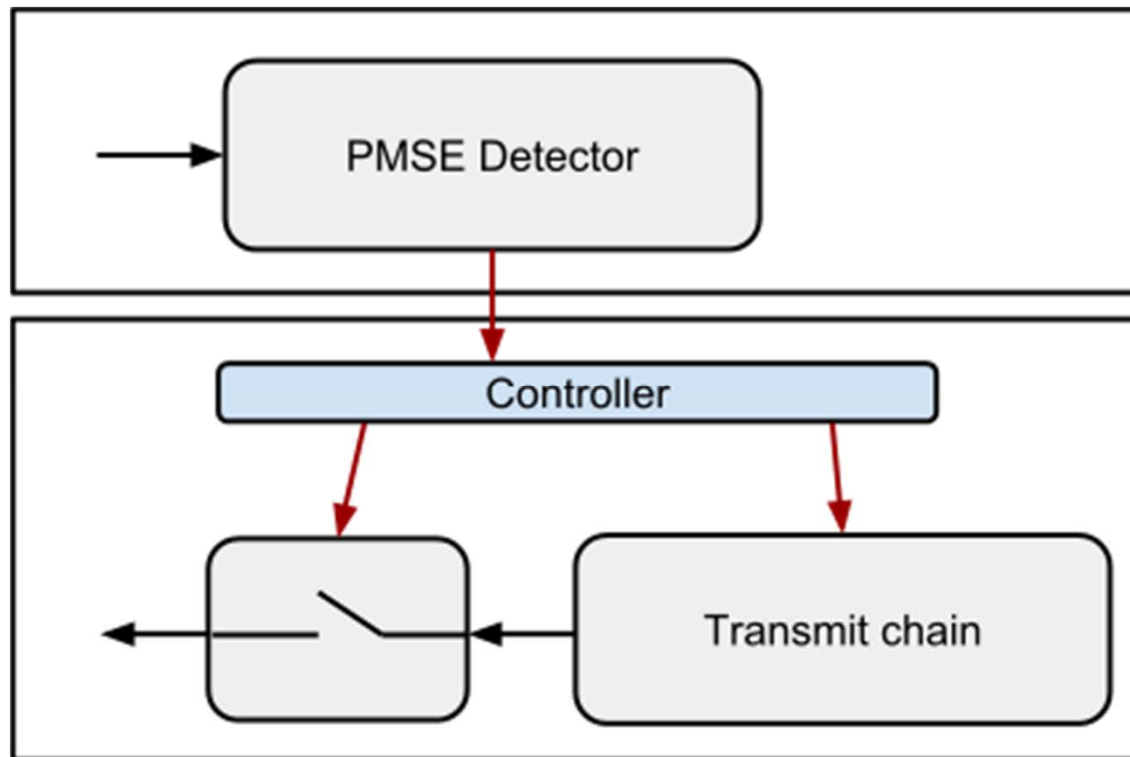


- Overview
- Key transceiver features
- Transceiver design
- Challenges





- Overview
- Key transceiver features
- Transceiver design
- Challenges





Signal

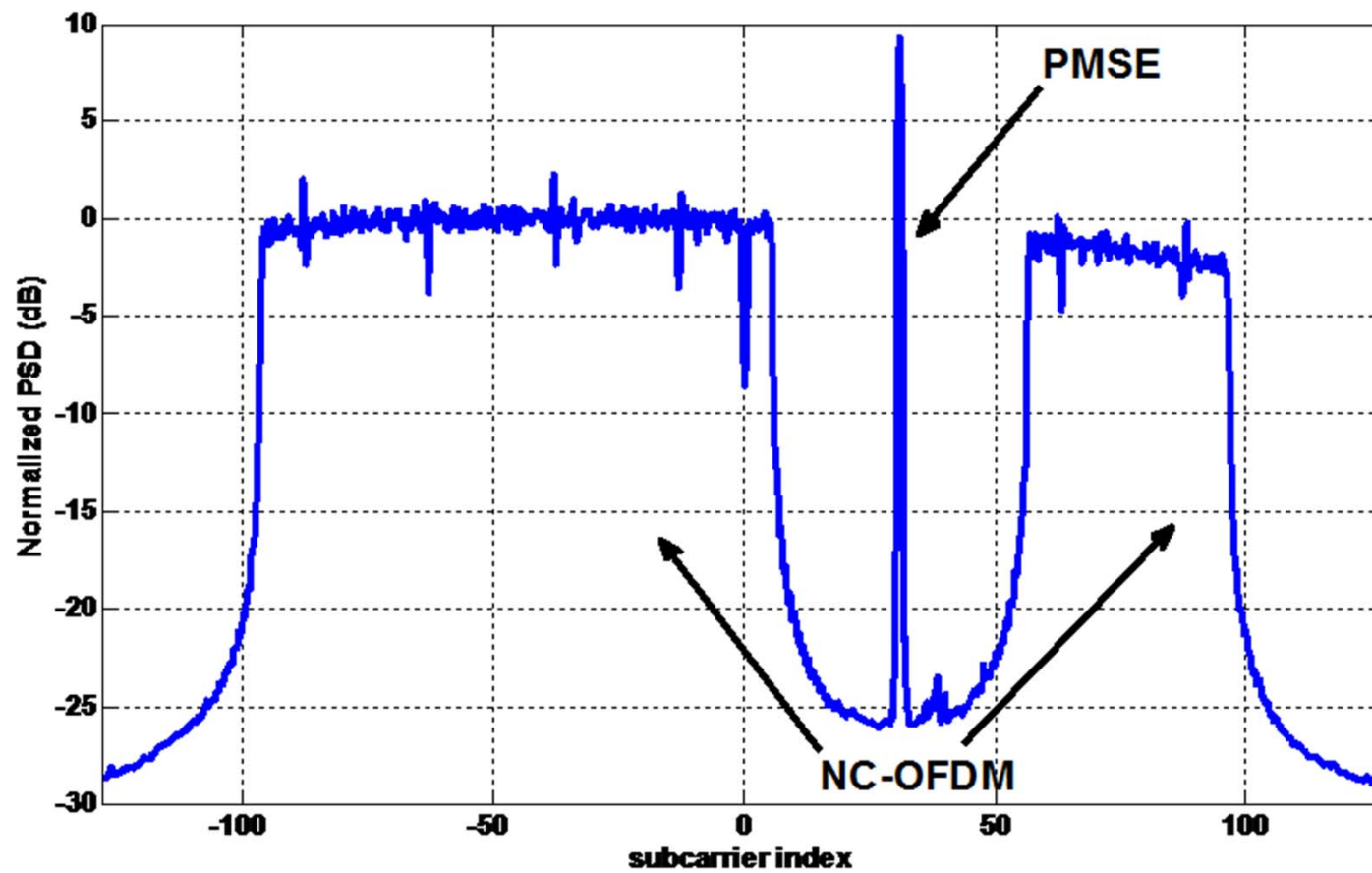


Squelch



To
Detector





Thank you

Questions?

Paul Sutton

11th March 2014
SDR-WInnComm 2014