

Rapid Prototyping New 5G Waveforms with LabVIEW Communications on NI SDR platform

National Instruments demonstrates the benefits of the GFDM (Generalized Frequency Division Multiplex) 5G waveform for asynchronous use of fragmented spectrum in coexistence with a real-time legacy LTE link at Mobile World Congress 2015.

The real-time demonstration was developed to prove the viability of the GFDM concept through the 5G NOW project in collaboration with 5G Lab Germany at TU Dresden. The system utilizes an integrated software-hardware design flow consisting of LabVIEW Communications Design Suite with LTE Application Framework software and NI software defined radio hardware.

Researchers quickly adapted the LTE Application Framework, which provides a ready to run, easily modifiable real-time physical layer (PHY) and lower medium access control (MAC)-layer LTE based reference design, to support the GFDM 5G waveform. They combined a real-time legacy LTE link with a GFDM transmission to build a flexible system for measuring the impact of 5G waveforms on the legacy link using bit error rate (BER) testing.

This demonstration is one of many examples of how LabVIEW Communications System Design Suite, Application Frameworks, and flexible software defined radio hardware can be used to accelerate the validation of new 5G waveforms through real-world prototyping.

