

Title

"SDR Evolution: In and Out of the Lab"

Abstract

This tutorial will present examples in three application areas that are enabled by the next generation of USRPs:

Low-Cost Portable SDR: Being able to explore the radio spectrum and interact with many common wireless devices provides a convenient path to engage new SDR users and students: read your electronic traffic toll tag's ID, map the movements of seafaring vessels, or decode a restaurant's 'your-order-is-ready' pager network! We will show how these examples work in detail by examining their GNU Radio implementations.

High-Performance SDR for Advanced Wireless Prototyping: The most recent developments in accessible SDR platforms can be leveraged in key research areas, such as Massive MIMO and dynamic spectrum access. Using the enhanced capabilities of the latest hardware, we will demonstrate radio direction finding, RADAR and an OFDM MIMO link. We will also show high-bandwidth signal manipulation using GNSS as an example.

SDR Evolution: Increasing demand for wireless data will continue to drive the advancement of SDR platforms. We will look at the latest trends in SDR and give you a sneak peek at our upcoming embedded rapid prototyping and deployment solution.

Bios

Balint Seeber: Balint Seeber is a software engineer by training, and a perpetual hacker. After graduating from the University of New South Wales in 2005, he began PhD research at the University of Sydney. He started experimenting with Software Defined Radio in his spare time, and this new obsession led him to take on the role of SDR Evangelist and Applications Specialist at Ettus Research.

Ben Hilburn: Ben Hilburn earned his B.S. in Computer Engineering, with minors in Mathematics and Computer Science, from Virginia Tech in 2008. He went on to earn his M.S. in Computer Engineering from Virginia Tech as part of the Wireless@VT research group, graduating in 2011. He is now the Engineering Manager at Ettus Research, located in Santa Clara, CA.