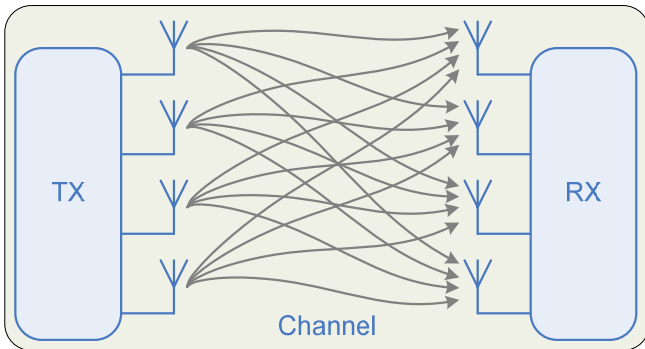


Multiple-Input Multiple-Output (MIMO) Communications Development and Verification System



Cambridge Consultants Ltd has developed a development and verification system for Multiple-Input Multiple-Output (MIMO) wireless communications systems. The modular design allows for developing and verifying space-time coding algorithms and channel models.

Written in Matlab and C, it comprises various transmitter, channel, and receiver implementations.

A Flexible and Modular Approach

The simulation system was developed using a flexible, modular approach. Users can select from libraries for transmitter, channel models, and receiver.

Some Space-Time Coding (STC) algorithms are provided. Users can easily develop and implement their own algorithms. This allows users to concentrate on algorithm design instead of having to create infrastructure.

Easy to use

The simulation system supports two modes of operation

- GUI mode for interactive visualisation and evaluation of different algorithms and configurations.
- Visualisation of simulation results like BER.
- Data base of simulation results
- Scripting mode for high simulation performance.

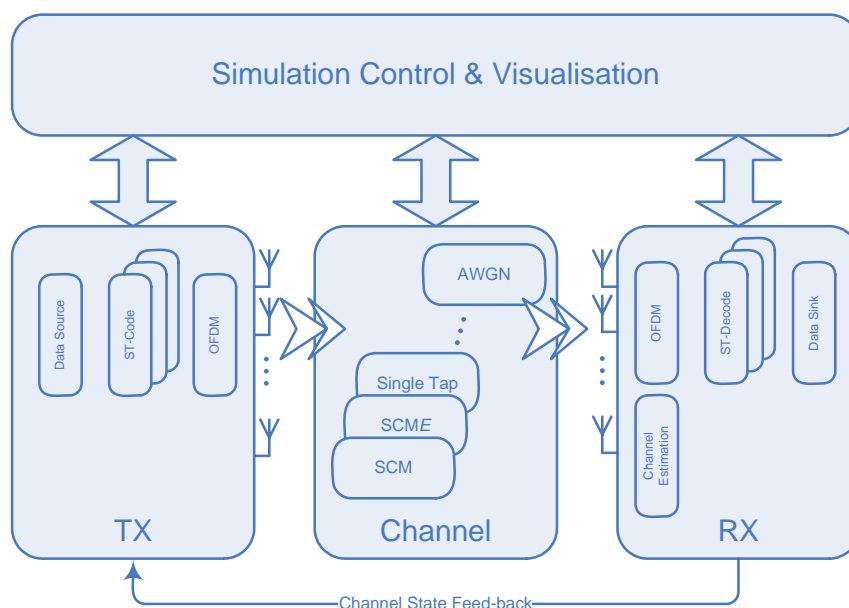
Libraries

Transmitter & Receiver

- Open-loop techniques
- Closed-Loop techniques

Channel models:

- 3GPP Spatial Channel Model (SCM) plus enhancements (SCME) for Long-Term Evolution (LTE)
- Simple channels, e.g. AWGN and single-tap for establishing performance base-line



Software-Defined Radio Framework

The MIMO development system can be integrated into Cambridge Consultants' Software-Defined Radio Framework. It allows for extending the scope of the development to issues like Error Correction

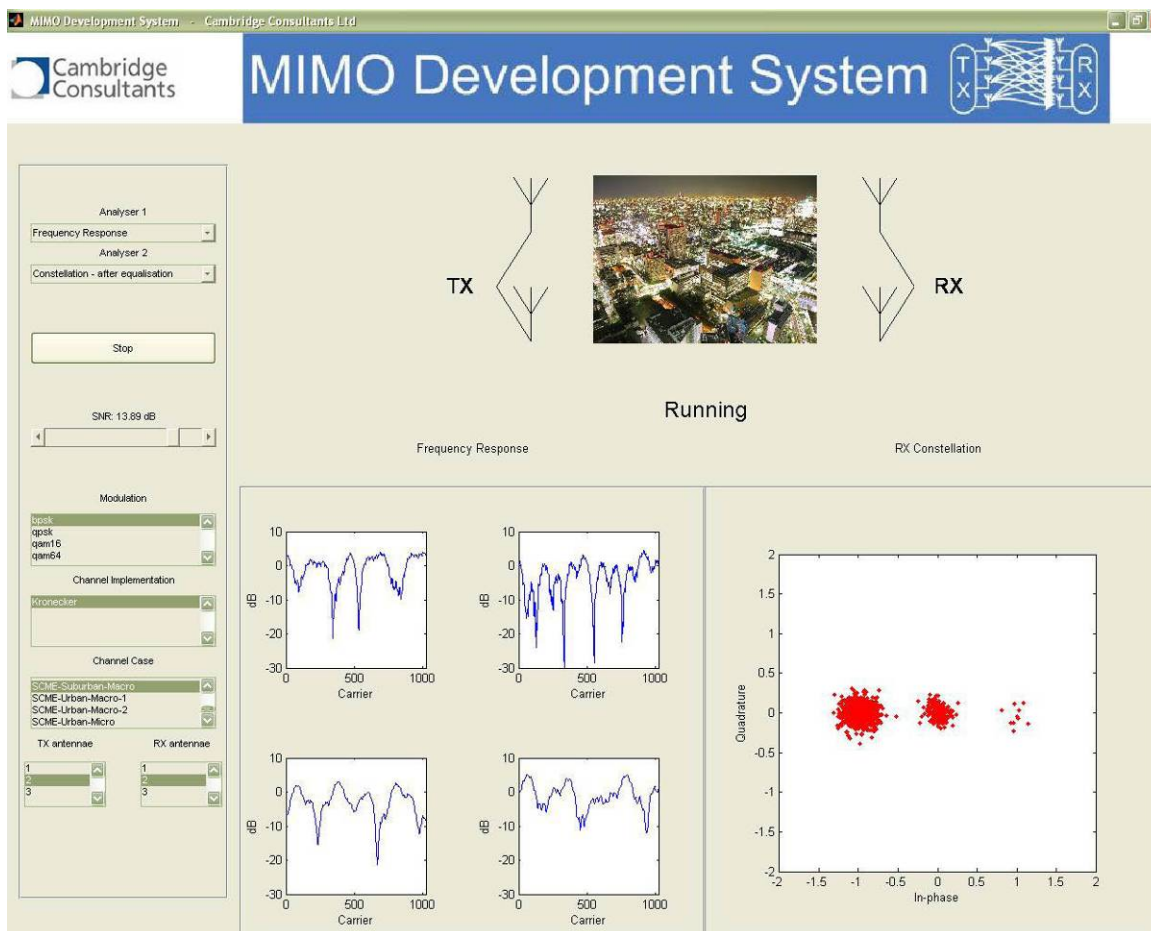
Wireless DSP at Cambridge Consultants

We offer a range of services and intellectual property in many wireless DSP-related areas including:

- Flexible DSP cores
- Error Correction (Turbo, Viterbi, LDPC, RS, etc.) and soft demodulators

- Complete software radio architectures
- System modelling
- DSP operating systems, embedded and application software
- ASIC and FPGA design
- Fault tolerant video transmission
- Reverse engineering of DSP

Screenshot including display of simulation results



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Cambridge Consultants Ltd
 Science Park
 Milton Road
 Cambridge
 England CB4 0DW

Cambridge Consultants Inc
 101 Main Street
 Cambridge MA 02142
 USA