

The Forschungszentrum Telekommunikation Wien (FTW) is a dynamic company with an international atmosphere that carries out application-oriented research in telecommunications. Our mission is to fill the gap between science and industry, pursuing a challenging research program in collaboration with both academic and industrial partners. Currently we are offering a Master thesis for the following topic:

Future DSL Systems

Digital subscriber line (DSL) technology owes its success to its steady development, with solutions becoming now available on the market which offer hundreds of Megabits per second. The next generation of DSL is still in its infancy, but is foreseen to enable data-rates in the order of a Gigabit per second over a single twisted copper pair. This dramatic boost in data-rates is enabled by the deployment of the system over shorter loop-lengths (smaller than 200 m), and foremost by applying advanced signal processing schemes (e.g., enhanced channel coding) and utilizing up to 300 MHz bandwidth (10 times higher than current systems). The details of the selected communication technology are yet to be specified, leaving much room for research with impact on the specifications of the next-generation DSL technology.

In the course of this master thesis work the student is supposed to extend the available simulation environment for current DSL systems implemented in Matlab, with the goal to select and compare various multi-user channel access, coding, and multi-user signal processing schemes.

Needed skills include:

- A self-driven and autonomous (research oriented) working style.
- Basic analytical and programming skills (e.g., Matlab and C)
- A solid background in communication theory and signal processing for communications
- Knowledge of current DSL technology is a plus.

The expected duration of the master thesis is 6 months. For master students we are able to provide a monthly financial compensation.

FTW offers researcher positions for talented scientists interested to pursue a doctoral degree. An excellent master thesis is a strong plus for a further possible employment at FTW.

Applications should be sent to
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