We are Austria's largest Research and Technology Organisation and an international player in the research areas that we cover. This makes us a leading development partner for industry and a top employer in the scientific community. Our Center for Digital Safety & Security is seeking to hire a new Ingenious Partner for our location in Vienna. Applications are invited for a:

Master Thesis "Efficient Implementation of a Ray-Tracing Tool"

Ray tracing is an important tool for 5G channel modelling for both mm-Wave high bitrate links as well as ultra-reliable low-latency communications (URLLC). In this master thesis the student will work on the AIT ray tracing tool adding new important features.

Description

- Reduction of the computational complexity and simulation time needed for the construction of the reflection image-tree (e.g. inspired by techniques used in the video game industry) without degradation of the prediction accuracy
- Improvement of the prediction accuracy of an existing ray-tracing simulation tool by including radio propagation mechanisms not yet included, e.g. multiple diffraction mechanisms
- Literature research on efficient image-tree construction and iterative multiple diffraction implementation in order to identify already existing solutions
- Validation of the implementation by comparison with measurements of real-world radio propagation channels

Candidate profile

- Academic studies of electrical engineering, telecommunication engineering, computer science or similar
- Excellent know-how in digital signal processing, wireless radio channels and propagation mechanisms
- Good knowledge and experience with MATLAB
- Very good knowledge of either German or English (fluent in spoken and written)

Your compensation:
EUR 697,69 gross per month for 20 hours/week based on the collective agreement (Forschungs-KV).

Please submit your application documents, including certificates, to
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