



The Max-Planck-Institut für Radioastronomie (MPIfR) in Bonn (Germany) one of the 80 dedicated research institutes of the Max-Planck-Gesellschaft zur Förderung der Wissenschaften e. V. (MPG). has started a new European-funded project that aims to carry out the most precise tests of Einstein's general relativity ever, by carrying out extremely accurate astronomical observations of binary pulsars using the 100-m Effelsberg radio telescope. In order to achieve this, the microwave and digital groups at MPIfR have started developing the world's most advanced radio receiver and signal processing hardware. We are looking for a

**Digital Systems Design Engineer
University Degree (MS, PhD)**

who will work with the digital group of the MPIfR.

Your Tasks

- Development of high-speed ADC hardware at multi – GHz bandwidth
- Implementation of high-speed signal processing designs in FPGA
- Formulating hardware and development timescale estimates

Your Key Skills

You will be degree qualified with some post-graduate experience, preferably in communications and/or defence systems design, an will be able to demonstrate comprehensive knowledge and experience in most of the following areas:

- Mixed signal hardware board design
- Digital Signal Processing on high-speed FPGA using VHDL (FFT, filterbanks, polyphase filtering)
- VHDL simulation (ModelSim)
- VHDL synthesis for FPGA (any of Mentor, Synplicity, XST, Quartus, etc)

A working knowledge of one or more of the following areas would be an advantage:

- Signal processing algorithms and architectures (RFI Mitigation, radar, sonar, SIGINT, EW).
- Physical layer communications (modulation/demodulation, equalisation, coding/decoding, satcoms, mobile)
- Being prepared to eventually communicate with the group's engineers and technicians in German language.

Our Offer

- A very interesting, multi-faceted work in a dynamic scientific environment at the forefront of radio astronomical research.
- Opportunity to be involved in direct scientific work, if wanted.
- Payment and social benefit are based on regulations of the German tariffs for public employees (TVöD) depending on your qualification and experience.

The position will be on a three year contract with a possibility of a two year extension.

The MPG wants to raise the proportion of women in areas where they are under-represented. Women are therefore especially encouraged to apply. The MPG also wishes to employ more severely challenged persons, whose applications are also encouraged. Candidates should send their application including all usual documents indicating the **number 1106** to our human resources department.

**Max-Planck-Institut für Radioastronomie
Auf dem Hügel 69
53121 Bonn**

