highstreet technologies
Network solutions

highstreet Digital Circuit Design

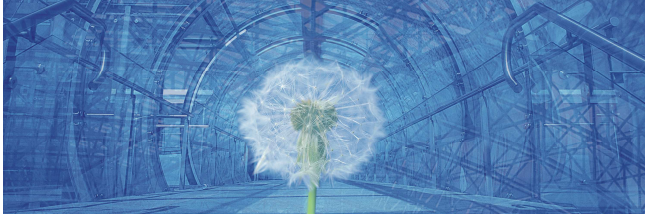
Service Flyer

OVERVIEW

Despite the increasing portion of firmware in today's telecommunications equipment it is still the digital circuitry that implements the core functionalities of data processing and transmission. Indeed, even tasks such as packet classification and forwarding, originally done in software, are transferred to the hardware for the sake of speed.

State-of-the-art FPGA technology provides enough gates for implementing even complex functionality, and the clock rates enable data processing at wire speed. The flexibility of FPGA design is a perfect fit for modern iterative equipment development processes. Digital circuits can first be implemented in an FPGA. After several cycles of modification and error correction, the design can be migrated to a potentially more cost-effective ASIC.

The hardware specialists of highstreet technologies have more than ten years of experience in the development and the test of digital circuits for telecommunications equipment, implemented in both FPGA and ASIC technology. They are poised to support equipment manufactures in creating innovative high-performance digital circuits and devices.



OUTSOURCING OF DIGITAL CIRCUIT DESIGN

Telecommunications equipment manufacturers may outsource the design of modules or even complete digital devices to the hardware team of highstreet technologies. The tasks that can be performed by the highstreet engineers span the complete design cycle from the functional and design specification via the implementation to the module and integration test.

RAPID PROTOTYPING

On the basis of its in-depth understanding of telecommunications equipment highstreet technologies is able to investigate new technologies with the use of prototypes. Customers only need to roughly explain what they are interested in. Then the experts of highstreet technologies specify the requirements on prototype implementations. Their flexibility enables them to rapidly adapt prototypes to new demands.

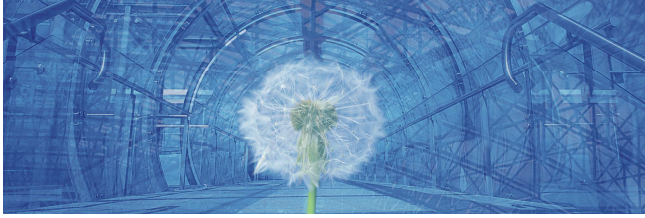
IP-CORE CREATION

Similar to the Rapid Prototyping Service, the IP-Core Creation Service implements new telecommunications technologies in an FPGA or an ASIC. The main difference to the Rapid Prototyping Service is that the IP-Cores reach product quality after intensive testing.

TECHNOLOGY

highstreet technologies' hardware designers have worked with the hardware description language VHDL for many years. If so desired by our customers, however, they would be flexible enough to become quickly aquainted with any other hardware description language.

We typically work with FPGA technology from Xilinx (Virtex series). Again, the hardware designers of highstreet technologies would be ready to work with any other FPGA technology on request.



SUMMARY

Digital Circuit Design Service	Deliverables
Outsourcing	Functional and / or design specification Interface specification HDL code with inline documentation and technical data Module test specification and report Integration test specification and report
Rapid Prototyping	Feature list HDL code with inline documentation Study report
IP-Core Creation	Feature list Functional and / or design specification Interface specification HDL code with inline documentation and technical data Module test specification and report Integration test specification and report

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