

Master 2015

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**Development and Implementation of an AIS Transceiver based on a
Xilinx Zynq7000 SoC (System-on-Chip).**

ABSTRACT - Masterthesis

The work in hand is primarily concerned with the development and implementation of an AIS transceiver based on a Xilinx Zynq7000 SoC (System-on-Chip). AIS is the abbreviation of Automatic Identification System and will be used in maritime traffic. The purpose of this system is to increase the maritime security by monitoring and anti-collision avoidance.

The development of the AIS transceiver has been done by using the hardware description language VHDL. In addition, the designed algorithms have been implemented in a given reference design. The reference design contains the programmable logic of the transceiver board. At the end, transmitter and receiver were verified separately, to test the interaction of programmable logic and processing system more specific. Finally, the transmitter and receiver were combined to a common transceiver system.