

The radar satellite TerraSAR-X monitors the Earth's surface in a near-polar orbit. To provide the maritime community with up-to-date information on the presence and location of icebergs, the high-resolution radar images provided by the satellite are processed automatically by an image processing chain. A cell-averaging constant false alarm rate detector is used for iceberg detection, which has proven its usefulness for terrestrial object detection already. However, data transmission and processing require an impractical amount of time for realtime operation. In the present work, an FPGA-based hardware prototype of the detection algorithm is proposed, which accelerates image processing by a factor of ten compared to a software implementation and shows potential for further speed-up in the future.