ABSTRACT

Synthetic Aperture Radar (SAR) is a type of remote sensing technology that is very likely to be applied in Indonesia. With radio waves as the 'eyes', remote sensing by using SAR enables low-illuminated observation in any weather. This is much more preferable than using optical sensors. SAR utilize the information from combining reflected signal and *platform* movement. Using these information, the system synthesize a bigger antenna compared to the physical antenna built on the *platform*. Thus producing a higher resolution image.

This research studies about how to process SAR raw data to SAR image space. The processed raw data is generated from GIF image file with single and multiple point targets in various sizes. The whole process is simulated in MATLAB with optimized source code in order to increase efficiency and decrease processing time.

From this research, a processed image with 9.22% of accuracy is acquired.

Keywords : *SAR*, *Imaging*, Spotlight SAR, MATLAB