

## **ABSTRACT**

One way to diagnose the abnormal mass in female reproductive organs for cyst type is to do a reading the ultrasound image manually. Problems that occur later is the subjectivity each radiologist in interpreting US image. Therefore it is necessary to make an early detection tool that is objective for identifying the existence and type of disorder cystic mass on female reproductive organs.

Ultrasound image has characteristics with low contrast, high noise, and contain a lot of artifacts attenuation. Hence the realization of the system focused on segmentation method in order to separating the targeted object with the background through region split and merge. These methods include segmenting based on region that emphasizing the similar criterion of the image's element. Stages of system design includes a global preprocessing to enhance image quality, segmentation using region split and merge to separate Region of Interest (cyst object) with background (normal uterus), and cyst object analysis of ultrasound image with the addition of several questions to analyze the symptoms. Output system resulting diameter of ovarian cyst, early diagnosis of ovarian cysts types and next treatment information that suitable for each diagnosis.

Image data that have been used is 36 US images of cyst within ovary. From the examination, obtained system accuracy rate is 88.89%. System computational time for execute the whole process is about 10.218-12.000 s.

**Key Words:** ovarian cyst, identification, US image, region split and merge.