**OBJECT BASED CLASSIFICATION APPROACH FOR NON LINEAR OBJECTS**

Basumatary S.1\*, Khan M.J.1,2 and Singh P.P.1,2

1 Department of Computer Science & Engineering, Central Institute of Technology Kokrajhar, India

2 Department of Computer Science & Engineering, Greater Noida Institute of Technology, Greater Noida

[\*pankajp.singh@cit.ac.in](mailto:*pankajp.singh@cit.ac.in)

***ABSTRACT***

Remotely sensed imagery's resolution has risen significantly in both the spectral and spatial domains during the past few years, providing a large amount of spectral and spatial data. In this paper, a non-linear object classification approach is discussed on incorporating K-Nearest Neighbour (KNN) algorithm for segmentation and classification. Analyzing digital imagery is done by using a technique called object-based classification. Both type of spectral and spatial information are used for classification. In this study various features of image objects are extracted for classification of non-linear objects. Spectral features of the training image objects are extracted using region of image (ROI) based samples which are used in KNN algorithm for segmentation and classification with a good level of accuracy. The primarily focus of this work is to extract the non-linear objects by avoiding misclassification in a compact manner and also to improve the visibility of object borders.

**Keywords:** Object-based Classification, Segmentation, K-Nearest Neighbour, Non-linear objects.