CLASSIFICATION OF HIGH RESOLUTION SATELLITE IMAGERY: AN EXPERT SYSTEM BASED APPROACH

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Abstract: Classification of a high resolution satellite image has now become a popular step to extract information, which can be achieved by using spectral information of existing classes in an image. Due to the abruptly changing environment, classification approach is needed to be robust for extracting information in better ways. Therefore, an expert system based approach will help to resolve this issue in existing classification techniques. An expert based classification system is approaching towards a hierarchy of rules in a decision tree format to derive a high level of class information. To drive a rule based expert system, a list of conditional statement is required to approach information component. This expert system constitutes with two parts such as a knowledge engineer, which provides an interface among application oriented variables, rules, expected output classes and knowledge based data container to construct a decision tree and the second part is knowledge classifier that provides an interface for a non-expert to relate the knowledge base and generate the output classification. This expert classifier initially invoked a knowledge base file and also evaluate its effectiveness from the knowledge engineer. The termination condition can be recognized as final resulted output in form of extracting classes. Just before of the proceeding of a termination condition, some intermediate stages show the association between the classes. The main interest of information classes is building and vegetation area in an IKONOS image of developed urban area.

Keyword: Classification, Knowledge engineer, knowledge classifier, expert system and decision tree