

# **THE POTENTIAL USE OF VERY HIGH SPATIAL RESOLUTION DATA AND OBJECT-BASED CLASSIFICATION FOR MAPPING URBAN SPRAWL**

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For flood risk modelling at watershed level, it is important to identify urban areas due to their soil waterproofing function. Very high spatial resolution images are now able to discriminate the elementary features which characterize urban landscape. Nevertheless, the traditional per-pixel classifier approach appears inadequate for mapping these landscape objects.

We present an image analysis flowchart, based on the use of object-oriented software (eCognition). The maps obtained identify the urban landscape at different scale levels (urban areas and buildings – settlements) and at different organization levels (dense, discontinuous or low-density urban landscape). A particular effort has been made to assess the quality of the results (confusion matrix, Kappa coefficient), in relation to field data.

The comparison of these results with those obtained from a computer-assisted photo-interpretation classification of urban landscape has demonstrated that this method is very accurate for identifying and locating characteristic urban features. Using a semi-automatic approach, it enables mapping over large areas (several hundred square kilometres) of extensive data describing landscape features, having significant consequences on the watershed hydrologic behaviour.