

THE ANALYSIS OF SURFACE DRAINAGE CHARACTERISTICS IN VERY HIGH RESOLUTION DIGITAL ELEVATION MODELS OF SELECTED AREAS OVER 200km² AT RESOLUTIONS OF 20cm, 50cm AND 100cm

J. Martin, J. Philip O'Kane

Department of Civil and Environmental Engineering, National University of Ireland, Cork "JMartin@ucc.ie", "JPOKane.ucc.ie".

The drainage network of a low-lying catchment in south-west Ireland was generated from digital elevation models of the catchment at very high resolutions in support of the design of a hydraulic, hydrologic and hydrodynamic model of the flooding in the low lying areas. The German Aerospace Centre's (DLR) High Resolution Stereo Camera (HRSC-A) provided digital elevation models of the catchment at a resolution of 100cm over 200km², and 50cm and 20cm resolutions over smaller selected areas. A number of different software packages are used to generate the drainage networks from each digital elevation model. The derived networks for corresponding areas are compared at different resolutions and assisted in the definition and implementation of the flooding model. The results of this study will define the best resolution to be used in a digital elevation model integrated with a one dimensional hydrodynamic model of the catchment using Mike11-GIS.