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Spatial data for planning

The Government of Sir Lanka has been placing high priority on the socio-economic development of the Nation. For this process, initial phase was planning the area for developing. This needs a base plan, showing existing details. Several methods were studied by the Survey Department to produce plans by extracting features using spatial

data-remote sensing data and aerial photographs. This report describes the method studied and its process to prepare detail plans using Spatial Data-Air Bome Romote Sensing Images.

The planners used information from the local government authorities of respective towns for selecting the limits of the area to be developed. The officials of local authorities. Urban Development Authority and Survey Department inspected the area in field to identify the limits and marked them on existing maps. The boundaries marked on one-inch sheets wee adopted to select spatial data images. The methods were tested to extract features from spatial data. The features obtained using Space Borne Remote Sensing Images were of low resolution and adequate detail could not be extracted. Other method was tested extracting features from Air Photographs. Black and white aerial photographs, covering Kegalle town on 1:20,000 scale, were used to prepare the orthophotograph in 1:2,000 scale. The features on the orthophotographs were extracted manually on to tracing paper. The same area on the aerial photograph (dia positive film) was also plotted on 1:2,000 scale on to drawing sheet digitally using a stero plotter. The features extracted into a tracing paper and the out put of the same area in same scale plotted by stereo plotters matched well with adequate accuracy. Although features extracted using stereo plotters is of very high accuracy, it is Although features extracted using stereo plotters is of very high accuracy, it is takes much time to produce a plan for a large area. As the purpose of a plan is to use it as a base plan to design and prepare master plan finally desired to produce plans in 1:2,000 scale extra ting features onto a tracing paper manually by using orthophotographs. Because of time frame and the accuracy needed, we were compelled to use ground survey methods for measuring to update the plans in field. The ozalid-prints from final detail plans were dispatched to the respective local government authorities. The coordinates for several points on plns and the identical points on ground were measured and difference calculated using the formula:

$d_i = [(x_i - x_{i-i})^2 + (y_i - y_{i+i})^2]^{1/2}, D_i = [(x_i - x_{i+i})^2 + (y_i - y_{i+i})^2]^{1/2}$

$\Delta d_{i=} (D_i - d_i)\ d = \Sigma(\Delta d_i)/n$, Where = 1,2,3,……,n

Where x_i is the x coordinate of i^{th} point on plan and y_i is the y coordinate of i^{th} point on plan. Where x_i is the x coordinate of point on ground and is the y coordinate of point on ground. The accuracy obtained for extracting features by using air bone remote sensing images (Orthophot updating) was ± 2.00m.