Abstract: In the course of the Austrian Research Program on Theory and Application of Digital Image Processing and Pattern Recognition, tools for precise localisation of targets and automatical reconstruction of object surfaces taking advantage of the high potential of automation offered by digital image processing techniques are being developed at the Institute of Photogrammetry and Remote Sensing at Vienna University of Technology (IPF). Two raster-based matching algorithms for localisation of targets have been implemented and tested. With respect to object surface reconstruction, a concept has been developed aiming at hierarchical feature-based matching using local surface models in object space. The concept heavily relies on the integration of a bundle block adjustment program.