

Digital Topographic Mapmaking in 1:2,000 Scale on Urban and Country Settlements Using Photomod System

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In modern photogrammetric production digital methods of remote sensing data processing are prevailing, and acquired geoinformation is stored and delivered to the customer in digital form. Now our enterprise is also using up-to-date technologies and equipment which allow to process huge volumes of initial data. Our hardware devices include computers Pentium-(U)4 with CPU 3.2GHz, 2Gb RAM, with video cards NVIDIAQuadro4 900 XGL, Wildcat etc., RAID drives with 3Tb volume, plotters HP with 1200dpi resolution, scanner GeoSystem with 4 micron resolution, as well as photogrammetric software PHOTOMOD version 3.6, providing aerial images processing and creating of digital cartographic value-added products.

The digital topographic map production workflow implemented on our enterprise includes the following steps:

1. Creating images blocks and starting new projects in PHOTOMOD Montage Desktop module.
2. Photogrammetric blocks adjustment and triangulation in PHOTOMOD AT и PHOTOMOD Solver modules.
3. Terrain features extracting and DEM building in PHOTOMOD DTM module in stereomode. At that all objects, which are necessary to appropriate relief modeling, are digitized: coastal lines, all kinds of highways and railways, forest or building block boundaries. It should be noted that PHOTOMOD software allows to execute almost 40% of this work (pickets extracting) automatically.
4. PHOTOMOD DTM also intended for contour lines building and editing, and contours building is fully automatic.
5. Orthophotomaps producing in PHOTOMOD Mosaic module, at that mosaic is orthorectified using created DEM, afterwards the orthomap could be split into sheets and added with marginalia.
6. The main stage in digital maps producing is images interpretation, that is why the most attention is paid to it. Orthomaps interpretation is executing in PHOTOMOD Vector module, which includes map symbols classifier.
7. Afterwards it is necessary to provide field control to check output map quality.
8. It is also necessary to execute editor's control of output production as well as on all stages of maps producing.
9. The last stage – is map software control and its export to SXF exchange format or export of orthophotomap into RSW format.

In case of paper maps production it is also necessary to make some additional procedures with map itself and its classifier to obtain quality and good-looking end product.

Paper maps and orthophotomaps are printing on high resolution plotter using special cartographic paper with low deformation and high color rendering.