Computer-based learning modules on remote sensing application for the Baltic and Sub-Arctic regions

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Abstract

The UNESCO project on computer-based modules in coastal and marine remote sensing is supported within UNESCO endeavour 'Environment and Development in Coastal Regions and in Small Islands' (CSI) and is realizing for the Baltic region in St.Petersburg. Each computer-based module is prepared as self-extracted package of:

- the image processing software,
- an introductory tutorial on how to use the software,
- lessons on the applications of remote sensing to oceanography and coastal management,
- satellite and airborne RS images to accompany the lessons.

The original DOS-based Bilko software has served students of oceanography, coastal management and environmental and other sciences well through five modules published between 1989 and 1996 in English, Russian and Spanish. Four lessons had been prepared in electronic and printed form in Russian with associated images and other teaching materials on "applications of satellite and airborne image data to coastal management".

The CSI UNESCO has a mirror site (in English and Russian) in St. Petersburg, that contains teaching materials and on-line services of interest to earth and marine scientists.

In 1997 the image processing software has been re-written for the Microsoft Windows user interface with considerable enhancements in both capabilities and presentation. A higher degree of lessons' user-friendliness and interactivity was achieved, responding to the needs of the individual user.

The first Bilko for Windows modules 6,7 (A.Edwards, Newcastle University, U.K.) and 8 are now available for trial. The module 8 in English and Russian for the Baltic region comprises the following materials:

1. Introduction (A.Edwards and I. Robinson).
2. Visual interpretation of images with the help of colour composites using NOAA images for the sea ice studying in the sub-arctic regions
3. Sea ice edge location on the base of digital satellite images
4. Using images of satellite "ALMAZ-1" in coastal areas:
   - land surface complex processing in the coastal areas using visible,
   - infrared and radar data
   - internal waves in the Lake of Ladoga

The Module 8 have been compressed and archived into "zip" files which can be downloaded using Netscape or another browser and unzipped using pkunzip or WinZip.