

# Mapping Reaches the Heights

The ICA Commission on Mountain Cartography was established in 1999 to define the topics involved and promote methods and knowledge of mountain cartography among scientists and professionals in cartography and related fields. The challenges have become more urgent in recent years because of the increased social and economic importance of mountain regions: they are exploited for recreation and for human transport and transit, there are increasing economic pressures on mountain zones, and natural hazards are ever-present. The International Year of the Mountains (2002) showed the importance attached to such environments by the UN.

The Commission holds its biannual workshops in locations relevant to its mission to examine the specific nature of the representation of mountainous areas and the handling of spatial data related to mountain environments. Subjects such as avalanche and glacier mapping, relief presentation, tourist mapping, data capture, photogrammetry, remote sensing, geo-visualisation and multimedia all form items of discussion. In October 2004, the 4th ICA Mountain Cartography workshop was held at Vall de N ria, Catalonia, Spain with 40 international participants.

The first topic discussed was ‘Risk and natural hazard mapping, snow avalanches’ which covered snow avalanches in the Tyrolean Alps and the Catalan Pyrenees, along with hazard analysis and an associated geo-spatial system for data management, modelling and visualisation in an Alpine valley. Understanding the dynamics of avalanche-path mapping using tree damage and tree-ring information was demonstrated, whilst the detection of potentially unstable areas and rock-fall hazard assessment in the Pyrenees using LIDAR was also covered. The session on ‘Cartography of glacial phenomena’ primarily considered the role of photogrammetry in change detection and glacier retreat mapping. ‘Visualisation, rendering, animation’ focused on 3D methods, including graphic design, visualisation, and an interesting hardware use of ‘Lenticular Foil Technology’ to deliver True 3D representation.

‘Alpine cartography, cave mapping, mountain tourist mapping’ considered different ways of communicating ‘mountain mapping’. A tourist map for a new recreation area in the Tibles Mountains, Romania was discussed. Public evaluation of whether US National Park Service 3D trailhead maps are better than conventional maps for orientation was summarised. The transformation from traditional pano-rama perspectives on the painter’s canvas to digital rendering was explained and another contribution described the design and production of natural-colour shaded relief maps using satellite land cover data.

A series of papers on ‘Topographic mountain cartography: relief representation, hill shading and cliff drawing’ concluded the workshop. Twelve diverse presentations looked at issues ranging from free and low cost datasets for international mountain cartography, to the production of new map sheets for mountain zones in South America. The representation of mountainous regions in the National Atlas of Switzerland, hill shading on Canadian topographic maps and the role of field checking were also considered.

The Commission will next meet during the International Cartographic Conference in A Coruna, Spain in July 2005 and the 2006 workshop will be held at ‘GOZDNA SOLA’, Triglav National Park, Slovenia, from 30 March to 1 April. Further information can be found at [www.mountaincartography.org](http://www.mountaincartography.org).