Workshop "High Mountain Cartography 2000"

44 participants from 9 nations gathered between March 29 and April 2, 2000 for the 2nd Workshop on High Mountain Cartography at Rudolfshütte/Austria. The workshop was held under the auspices of the ICA Commission on Mountain Cartography and was organised by *Manfred Buchroithner* and his team from the Technical University of Dresden/Germany and by *Heinz Slupetzky* of the University of Salzburg. It followed a similar event held two years before at Silvretta-Bielerhöhe/Austria (see ICA News No. 30). The aim of the workshop was to cover all aspects of the visualisation of high mountain terrain, both topographic and thematic, as well as multimedia developments.

A first block of presentations covered current applications in topographic mapping. *Lorenz Hurni* of the Institute of Cartography at ETH Zurich presented the new multimedia version of the "Atlas of Switzerland", the Swiss national atlas. Besides the possibility to visualise every area of the country in panorama and block diagram mode using a 25 m DEM, the atlas also covers thematic and mountain related aspects such as tourism, population diminution, alpine transit, etc. Further information can be found at www.atlasofswitzerland.ch. *Ernst Hauber* (DLR, Berlin) et al. presented the first results of a high resolution mapping of the Sonnblick Glacier in Austria by the new digital HRSC-A camera which will also fly on the Mars Express mission in 2003. *Thomas Damoiseaux* of DLR Oberpfaffenhofen focused on InSAR mapping of mountainous areas. *Martin Heller* from the University of Zurich presented a new approach in terrain modelling using tension minimising triangular meshes. Two presentations by *Nikolas Prechtel* (TU Dresden) as well as by *Lorenz Hurni* and *Bernhard Jenny* (ETH Zurich) covered significant advances in analytical shading by applying a broad set of numerical and graphical tools on a DEM both locally and globally. *Karel Kriz* from the University of Vienna pledged for special topographic winter maps in accordance with winter activities in sports and tourism. *Blanca Baella* and *Maria Pla* from the Institut Cartografic de Catalunya presented first results of standardised generalisation routines for topographic mountain maps applied to a data base 1:5000. *Dusan Petrovic* from the University of Ljubljana covered aspects of different representations of mountain tracks on classical and multimedia maps. *Markus Hauser* (Zurich) closed the presentations by giving insight in his extensive topographical database of the Pamir mountains. He can provide this base data set to interested researchers for different thematic applications.

The second session mainly covered multimedia aspects in mountain cartography. *Georg Gartner* (TU Vienna) provided information about the state-of-the-art in mapping using cellular WAP phones. Although the resolution of displays is very limited, one can imagine applications for mountain safety purposes. *Peter Sykora* (Uni Vienna) presented a GPS map interface for high mountain regions. *Theodor Wintges* and *Karsten Sänger* (University of Applied Sciences Munich) presented a 3D-map of a mountain tourist area using a specially developed 3D map symbology. Together with *Eduard Hörner*, *Theodor Wintges* then demonstrated a 3D animation of the avalanche catastrophe at Galtür/Austria. *Andi Neumann* (ETH Zurich), *Martin Heller* (Zurich) and *Manfred Buchroithner* (TU Dresden) reported on latest advances in 2D and 3D cave mapping using sophisticated surveying, mapping and display methods. The session closed with a

hommage to the late *Heinrich Berann*, the most reknown panorama artist who passed away on December 4, 1999. *Michael Wood* (University of Aberdeen) remembered his personal relationship to *Heinrich Berann* and his time as a student at his home in Tyrol/Austria. *Tom Patterson* (US National Park Service) gave a deep insight into *Heinrich Beranns* artistic and constructive methods.

In the third block, different thematic applications in mountain cartography were presented. *Viktor Kaufmann* (TU Graz) reported on the reconstruction and visualisation of the retreat of glaciers in the Austrian Alps since 1850 by methods of dynamic computer animation. *Caterina Gentizon* and *Philippe Schoeneich* (Uni Lausanne) presented GIS and geomorphological mapping as management tools in alpine periglacial areas. *Klaus Granica* et al. (Joanneum Graz) reported on an EU sponsored project for monitoring and visualisation of protection forests in high-alpine terrain using satellite data. *Martin Galanda* (University of Vienna) presented an interactive information tool for on-line visuaisation of the avalanche bulletin. *Gloria Marti* (Institut Cartografic de Catalunya) informed about current avalanche mapping activities in the Catalonian Pyrenees whereas *Karel Kriz* reported about similar projects in Austria.

During several evening sessions and round tables, the participants had the opportunity to discuss the projects and other activities. Besides, *Heinz Slupetzky* and a group of participants recorded a snow profile of almost five meters depth for the official Austrian snow and avalanche bulletin. Some participants even trained their skiing and orientation skills on a ski climbing trip on the nearby Sonnblick glacier! All participants were very pleased and convinced by the organisation and the quality of the workshop. Our warmest thanks go to *Manfred Buchroithner*, *Heinz Slupetzky* and their collaborators! The proceedings of the workshop will be published by TU Dresden. It is planned to organise a next workshop from May 15 to 19, 2002 at Mount Hood, Oregon, USA.

Further information about current activities, publications and workshops can be found on the commission's homepage: www.karto.ethz.ch/ica-cmc.

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Participants of the the 2nd Workshop on High Mountain Cartography at Rudolfshütte/Austria.

Left: Applied mountain cartography I: Digging a snow profile for the Austrian avalanche bulletin.

Right: Applied mountain cartography II: Workshop participants on a ski climbing trip to the Sonnblick glacier.