

3D reconstruction of landscape: A case study of extinct municipalities in Czech borderlands and military areas

Abstract

This work deals with theoretical and practical possibilities to use GIS to create three-dimensional model of landscape changes.

The object of the work was the creation and visualization of three-dimensional model of extinct municipalities Padrt' in a military area Brdy and Košťálov in the borderlands. The work used many available data sources, such as historical aerial photographs, historical photos, current orthophotos or historical maps. These data and specialized software were used to create digital models of the selected area, including three-dimensional models of buildings and vegetation, with emphasis on historical closeness. Work was focused on three selected periods of history: 40th of the 18th century, 30th to 50th of the 20th century and present.

The work resulted in fly-by animations and perspective scenes, which are compared with historical photographs. Historical models are also confronted with each other by a dynamic fading in fly-by animations.