

Utilization of Panoramic Images as an Alternative to Fish-Eye Photographs for Documentation of Road Weather Stations

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ABSTRACT

The poster will present samples of pictures made from photos taken around road weather stations. A simple technique of merging photos was used to catch the vicinity of the measuring site. Some examples of temperature curves will be shown to illustrate site properties. Such documentation is useful for students and forecasters and for training of road maintenance managers. In the case of Czech Republic it can also be used by researchers in verification process during parametrization of energy balance models.

Keywords: Road weather station – land use – panoramic images.

1 INTRODUCTION

In SIRWEC 2000 Lee Chapman [1] presented a method to utilize photos taken by digital camera equipped with a fish-eye lens. The resulting pictures were used primarily as an input for calculation of the sky-view factor. This approach can also be used to document and describe local conditions around road weather stations. But users may have problems to distinguish all details in the picture. As an alternative, we can combine several photos to cover the full 360° arc to produce one wide picture forming a “virtual tour” around the site.

2 DESCRIPTION OF TECHNIQUE

Many photo editing software offer special tools for merging pictures to visualize amazing wide-angle sights like the sea or the mountains. By taking c. 12 pictures, we can cover the whole horizon. A photo editor (in this case Zoner Photo Studio 9) will merge neighbouring snaps (see figures below) forming a panoramic image around the station.

Legend directly in the picture

It is recommended to start each mission in one direction (for example to the north) and have the road weather station as the starting position. We then assign North-East-South-West into the panoramic image and add further suitable remarks like in Figure 3 “power plant – local source of water vapour, higher risk of slipperiness”. When taking the pictures from the middle or opposite side of the road we can see instruments installed on the station pole and have complete information about the equipment.

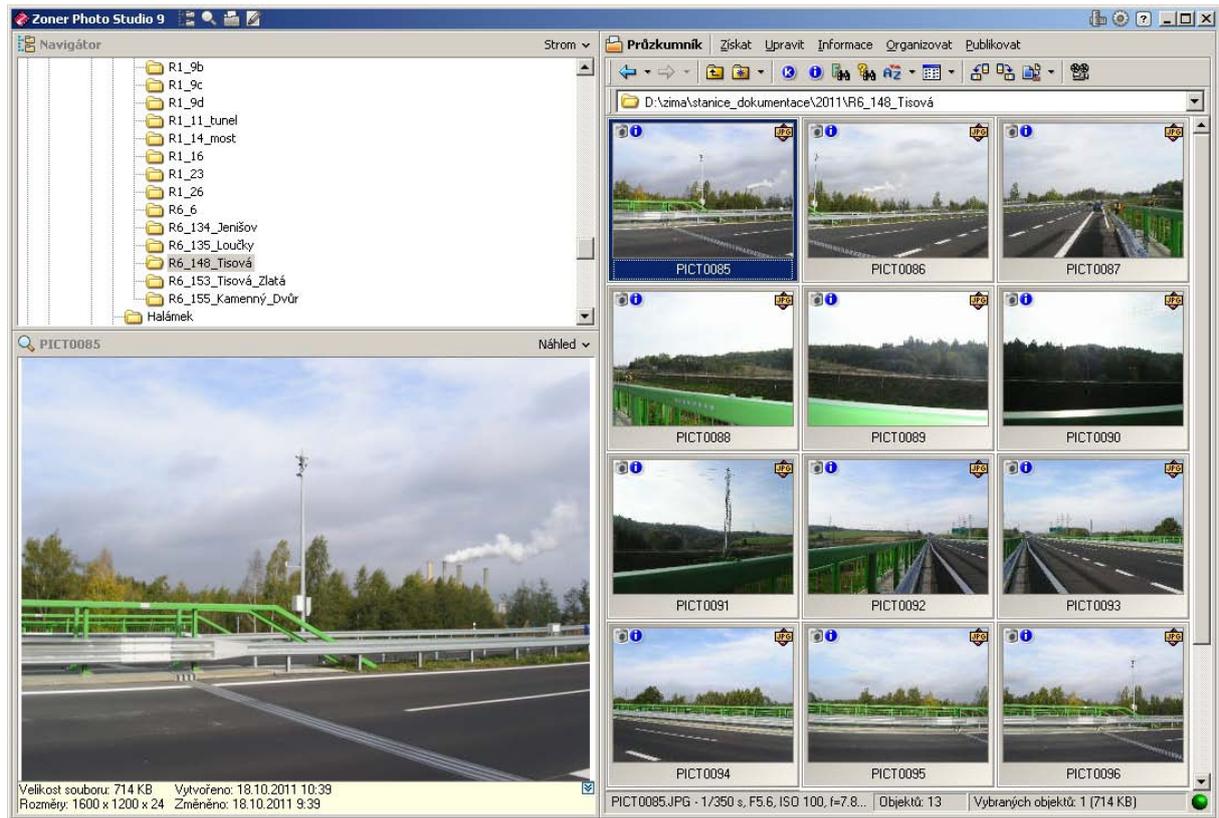


Figure 1. Source pictures in Zoner Photo Studio 9 panel.

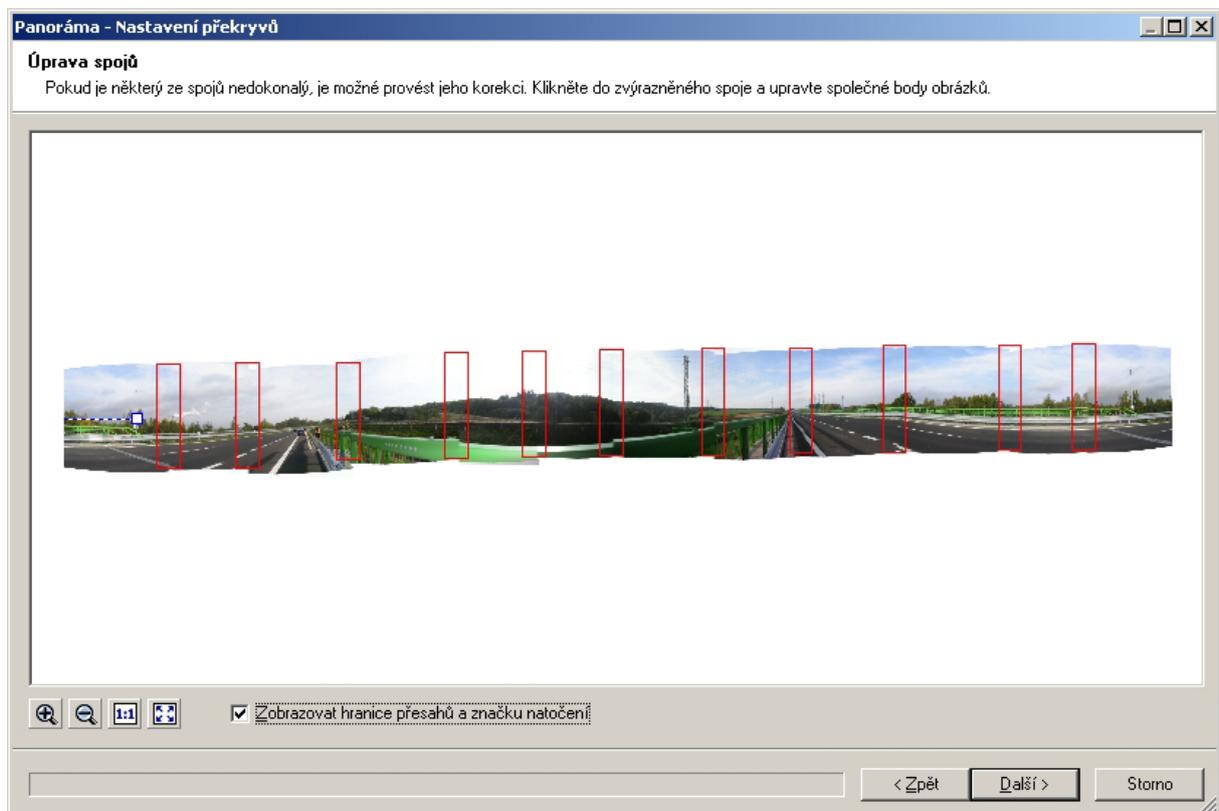


Figure 2. Merging of source pictures into one panoramic image.



Figure 3. Left and right half of final panoramic image with legend.

3 CONCLUSIONS

It is often very dangerous to move near the highways and users of RWIS have no chance to directly survey land use around measuring sites. It is, however, possible to take photos safely in collaboration with patrol maintenance vehicles to produce panoramic pictures for potential users and deliver them via PC as a “virtual tour” of the place.

4 REFERENCES

- [1] Chapman L, 2000. Improved One Dimensional Energy Balance Modelling Utilising Sky-View Factors Determined from Digital Imagery. *In: Proceedings of SIRWEC 10th International Road Weather Conference, Davos, Switzerland, 22-24 March 2000.*