Assessment of a passive infrared counter with a remote data transfer facility

Renate Eder, Albert Kahler and Arne Arnberger

Abstract — This study evaluated the reliability of the Ecocounter - Ecotwin© equipped with a remote control facility (Eco-GSM-unit) under different conditions. The counter is connected to a modem, which allows transferring data from the counter to the office via internet. We will discuss the reliability of the modem and the influences of the different locations and surroundings on it.

Index Terms — Passive infrared sensor, remote data transfer, video monitoring.

1 Introduction

Over the past decades, numerous devices have been developed for the purpose of monitoring visitor flows in recreational and protected areas [1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17]. Beside visitor counting by human observers, most common is the usage of automatic counters such as active and passive infrared counters. These long-term counting systems have several advantages as well as disadvantages.

One problem is the data download. Many of recreational and protected areas are large and difficult to access. It is time consuming to access remote located counting devices. Because of the high costs associated with data download, researchers, managers and producers are looking for more suitable solutions. Newest developments have equipped some of these counter types with remote download systems [17].

This study evaluated the reliability of the Ecocounter - Ecotwin© equipped with a remote control facility under different conditions.

2 Methods

The Ecocounter - Ecotwin© is a passive infrared-counter which is equipped with a remote control facility (Eco-GSM-unit). The counter is connected to a modem, which allows transferring data from the counter to the office via internet.

We placed the counter at different locations with different surroundings during spring and summer of 2008. We installed it indoors to assess the influence of walls and buildings, and outdoors. The outdoor setting was the Danube Floodplains National Park which is situated in the east of Austria and stretches from the city of Vienna, the

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Fig. 1. The Ecocounter - Ecotwin© with the remote control facility (Eco-GSM-unit)

capital of Austria, along the Danube River to the Slovakian border. The outdoor settings include shared recreational trails in close proximity to settlements and more remote locations, which are characterized as open spaces and those under a closed roof of leaves within the park. At each location, the counter worked for several weeks.

The data were provided at a website which was administered by the company eco-counter. Using a password, data could be downloaded.

3 Results

In all settings, the remote data transfer unit worked without any disturbances. We could not find any influences depending on weather or setting. The system was simply to install. The provided software for the data download was easily to use.

We used the system in an urban-proximate area. Further testing should be done in, for example, mountainous alpine regions.

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