

## Document 3.1 Introduction After Spell-Check and Grammar-Check

### Introduction

This report is a description of the methods and results of the Omni-Tech 1000 wireless heart-rate monitor study and a presentation of our recommendation to the Omni-Tech Executive team. The members of this project are three Omni-Tech engineers: John Horsney, Tim Maloney, and Amanda Brownstein. The Omni-Tech 1000 consists of a belt worn around the chest of a cyclist, which transmits a wireless heart rate signal to a computer/receiver on the handlebars. This currently uses DSRC. DSRC is also known by the name Wi-Fi 802.11b. John Horsney was approached by the Sales and Marketing leads of Omni-Tech sometime in early April in regard to a technical problem with this. The wireless signal between the chest belt and the receiver goes out during use, with the resulting effect that inaccurate data for the user is presented. The sales team is of the impression that this is a persistent problem with this specific model. Out of a total of 1620 monitors sold at \$140 each, Omni-Tech have had to refund or replace 980 units, which is a loss of \$13,720, not to mention the damage to Omni-Tech's credibility and reputation for quality. After four days spent examining and testing the model, it was determined that simply correcting the problem with the device would not be feasible. We decided to consider alternative wireless technologies and establish a set of criteria for a new wireless system. Two key criteria were the requirement that the new wireless system fit into the existing housing and to maintain our current cost. Our research included online resources, interviews, field research, and product testing. The conclusion of our test was reached on April 24, 2014 and determined that using Bluetooth 4.0 Wi-Fi is Omni-Tech's optimal option for correction of the problem with this product. During our field testing using Bluetooth no wireless failures were observed. As an additional feature, Bluetooth will allow multiple devices to be connected, which would permit a team leader to receive someone's data on an additional device. In addition, Bluetooth is \$2 less than our current Wi-Fi system. This upgrade will correct the product's failures, provide additional features, and restore Omni-Tech's reputation for quality and high performance. The following sections of this report will include the details of our methodology, the results, our conclusions, and our recommendations for the ETW-2000.