Velomobile Control & Telemetry System

Use Case Specification

Change Power Assist Level

Version 1.2

Revision History

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| --- | --- | --- | --- |
| **Date** | **Ver.** | **Description** | **Author** |
| January 15, 2009 | 1.0 | Initial Composition |  |
| February 3, 2010 | 1.1 | Post Review Revision | Shawn McGinnis |
| February 16, 2010 | 1.2 | Updated Requirements Trace | John Schmidt |
| March 13, 2010 | 1.3 | Updated Basic Flow QA | John Schmidt |

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# Change Power Assist Level

## Brief Description

When the rider wants to alter the way the power assist motor is controlled.

## Requirements Trace

1.1.2, 1.1.3, 1.3.2

## Involved Actors

Rider – The rider must have physical access to the system.

# Flow of Events

## Basic Flow

This use case begins when the rider wants to change the amount of power from the power assist.

1. The rider will slide the assist percentage to desired assist.
2. The system will read the difference between the current level and the new level.
3. If levels are decreased, the system will drop power levels.
4. If levels are increased, the system will check battery levels.
5. The system will store the new value and increment power assist level.
6. The system will repeat step 5 until levels are matched.
7. The system will respond indicating the new assist level and predicted remaining battery life.

# Preconditions

The ECU is in power assist mode.

The ECU display is at the home screen.

# Post Conditions

The power assist percentage will be change to desired levels.

# Scenarios

## Happy Day

**Assumptions**: The power assist percentage is at 50%.

**Steps:**

1. The system will show the current power assist percentage at 50%.
2. The user will change the power assist to 150%.
3. The system will check battery levels.
4. The system will show the current power assist percentage at 150%.
5. The system will calculate the new maximum duration at new power expenditure.
6. The system will display to the user remaining battery life expectancy.