Velomobile Control & Telemetry System

Use Case Specification

Transmit Telemetry Stream

Version 1.1

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Ver.** | **Description** | **Author** |
| January 15, 2009 | 1.0 | Initial Composition |  |
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# Transmit Telemetry Stream

## Brief Description

Device transmits metrics stream through the internet to the telemetry web system.

## Requirements Trace

2.1.1, 2.1.2, 2.1.4

## Involved Actors

ECU – Embedded Control Unit.

Web System – Web server parsing system.

# Flow of Events

## Basic Flow

This use case begins when the ECU has a stream of metrics ready to broadcast.

1. Device sends message to verify that web server is currently reachable.
2. Web server responds.
3. Device locates telemetry data and stores in a temporary buffer.
4. Device forms data in buffer into XML compliant stream protocol.
5. Device transmits data over the internet.
6. Web server receives data.
7. Web server responds with a success message.

# Preconditions

The system has a stream of metrics. Web System is reachable by ECU.

# Post Conditions

The system will be ready to build a new metrics stream. The data will be stored on web server through Parse Telemetry Stream Use Case.

# Scenarios

## Happy Day

**Assumptions**: The ECU has the heading of 120˚.

The web server is reachable.

**Steps:**

1. Device sends message to verify that web server is currently reachable.
2. Web server responds with an open socket.
3. Device locates the heading of 120˚.
4. Device forms the XML stream “<velo><heading>120</heading></velo>”.
5. Device transmits data over the open socket.
6. Web server receives data.
7. Web server responds with “<velo></velo>”.

## Rainy Day

**Assumptions:** The ECU has the heading of 120˚.

The web server is unreachable.

**Steps:**

1. Device sends message to verify that web server is currently reachable.
2. The system hits a timeout period while waiting for the response.
3. The system displays a broken link in the status bar, and inform the rider that no connection could be made.
4. The system will return to the previous state before transmit began.