Rieker Curve Advisory Reporting System (CARS™)
Training Class

May 2014

Updated November 2014

CONTENTS

- ## Setup & Installation

- ## Collecting Data

  - ### Using the Field Application

- ## Analyzing Data and Generating Reports

  - ### Using the CARS™ Internet Portal

Rieker CARS™ System Overview

Names of the components and how they connect

Setup

- Activating your Account

- Setting up the Tablet connection

- Installing in the test Vehicle

- Leveling and Zeroing the Inclinometer
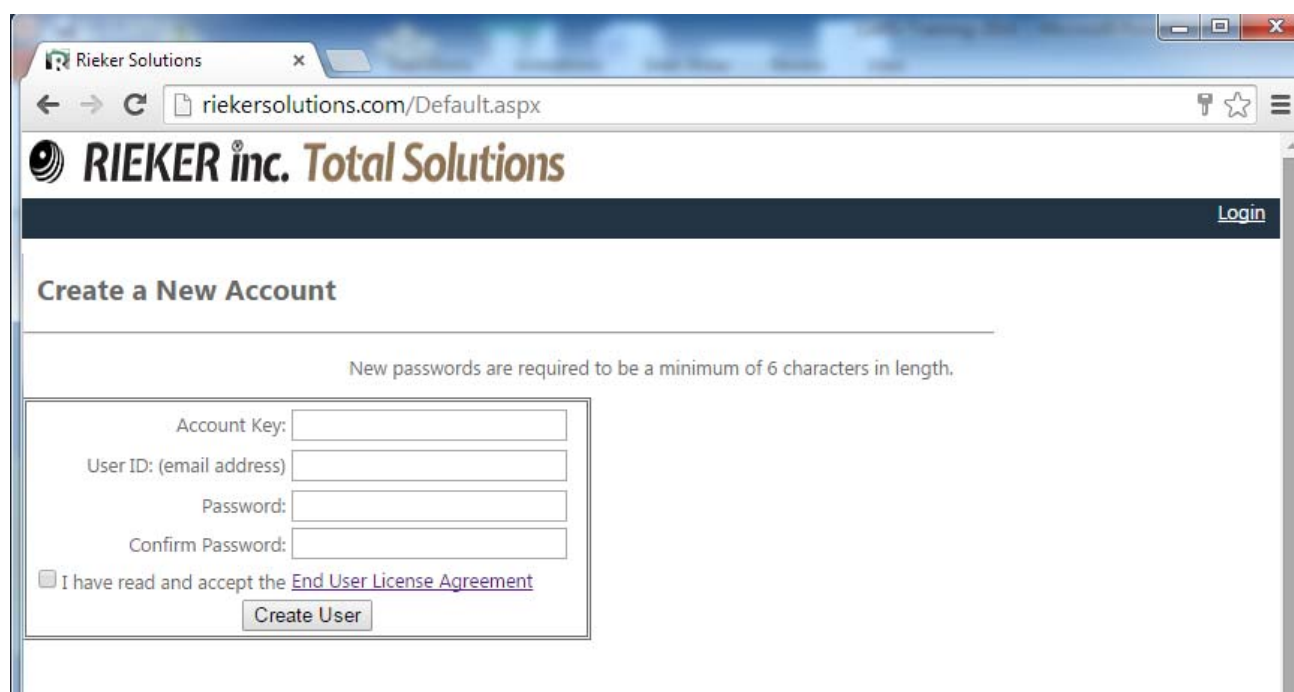
Setup - Activating your Account

- ## Activation E-mail
  - Sent to Account owner when Kit ship
  - If you didn't receive your key, email your name and kit serial number to support@riekerinc.com

- ## 16 digit Key in E-mail
  - Keep your for future reference

- ## CARS Portal: http://riekersolutions.com

- ## Create and Enter an Individual Password
  - Keep your password in a safe place for future reference
  - Do not share your password

Setup - Activating your Account

- Go to: HTTP://riekersolutions.com
- At the login prompt, choose **Register Account**

Password Management – My Account
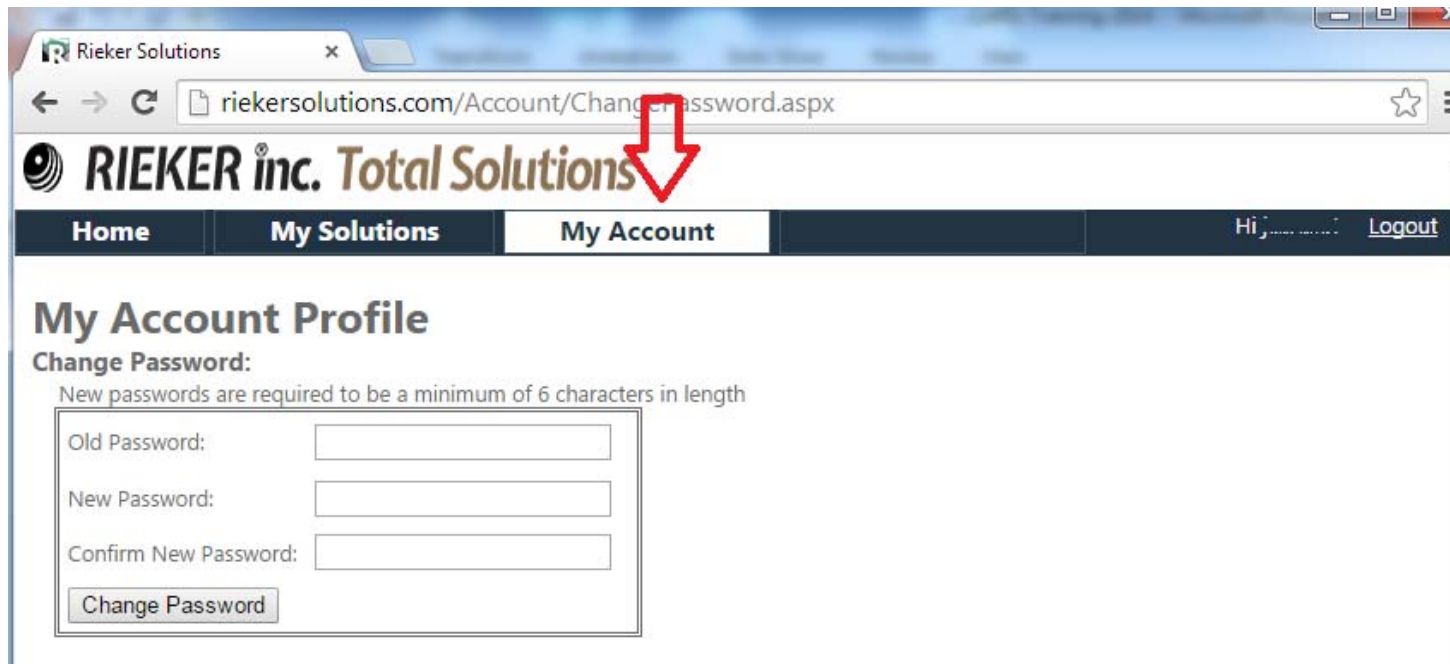
My Account
- Reset Password

Setup - Setting up the Tablet

- The Tablet comes configured with:
    - Windows 8.1
    - BBI Tablet software
    - Chrome & Firefox web browsers (Chrome is the default)
    - Go To Meeting

- Fully charge the Tablet using the wall charger

- Authorize on the local Wi-Fi if secure

    - Local Sys Admin may be needed for this step

    - Guest WiFi is fine – no need for internal services

- Verify account (Administration Page)

- Verify Tablet version (Administration Page)

Setting Up the Tablet – Validate your credentials

- Validate your credentials under Administration
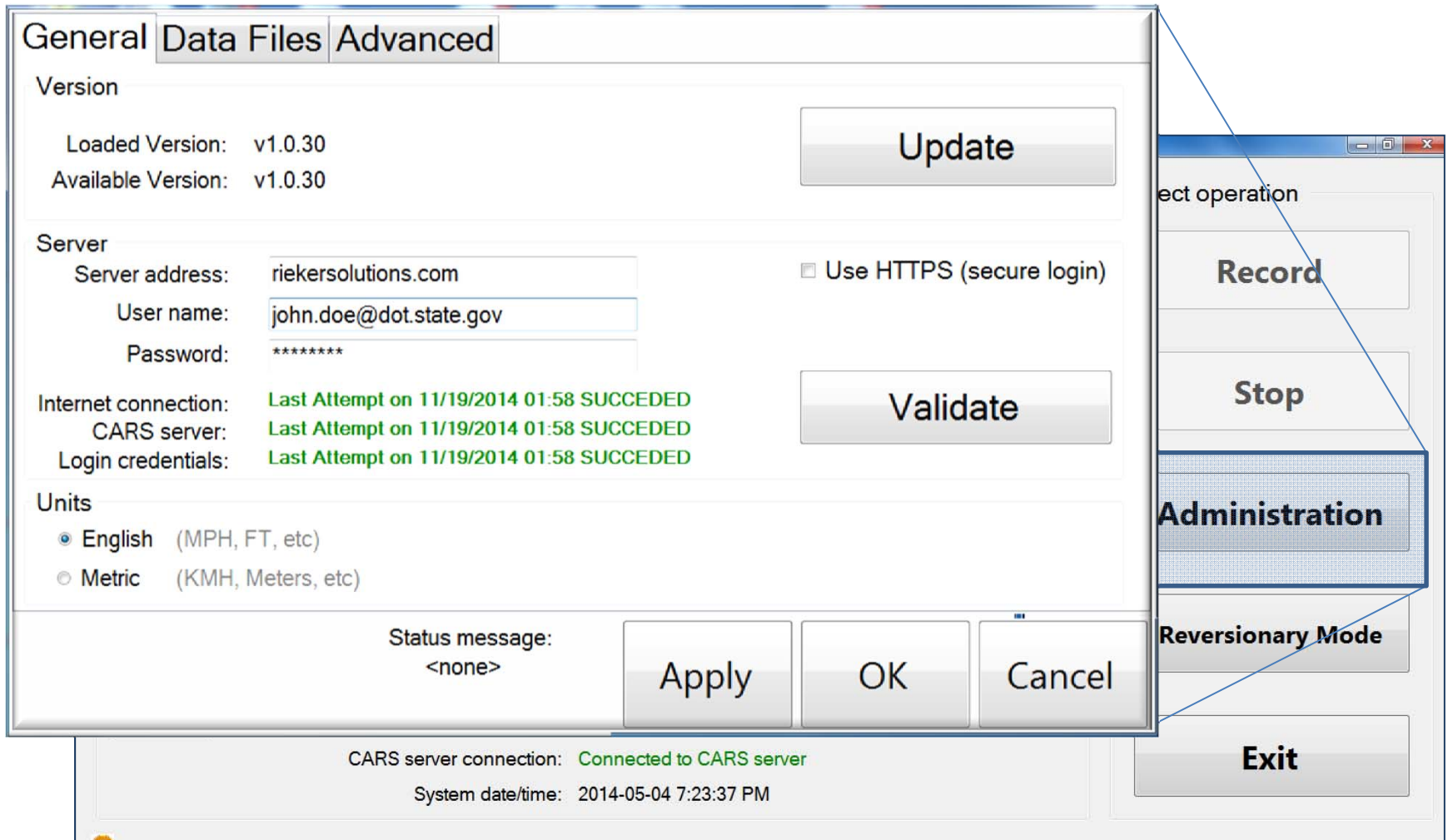
Setup - Installing in the Test Vehicle

- Locate a flat surface on the vehicle dash

- Affix RDS7-GPS-PRO with Velcro provided

- Mount tablet with provided mount

- Mount GPS antennae in the center of the vehicle roof

- Connect Power using Cigarette lighter adapter

- Connect USB and Antennae to RDS-GPS-PRO

- Turn on RDS7-GPS-PRO and allow to warm up 1 min

- Turn on Tablet

  - Login as CARS user

  - Launch BBI Software

Setup - Leveling and Zeroing the Inclinometer

- Re-zero unit each day before test data collection

- Re-zero after unit is powered On

  - Factory setting are restored on Power Off

- Drive to a known level pad and press "REL" to zero

- A more complicated method is available if no level pad can be found

Collecting Data

Using the Field App

Collecting Data – Using the Field App

- Launching the Field App

- Normal Use

- Optional Data Collection

- Loss of GPS – Reversionary Mode Use

Collecting Data – Using the Field App

- Ensure the RDS7-GPS-PRO device is Powered and Leveled
    - Antennae connected
    - USB connected to the tablet
    - Allow the GPS to acquire a signal (about a minute)

- From the Desktop tap on BBI Safe Speed

- If the RECORD button is enabled, the tablet is ready to capture test data

- The tablet will not be connected to the Internet while driving and collecting data

Collecting Data – Using the Field App

Field App – Home Screen

# Collecting Data – Using the Field App

- Record Continuously
  - No need to start/stop recording
  - Start and Stop is OK too
- Drive smoothly at or below the speed limit
  - Slower is better
  - Stay in the center of the travel lane
  - Avoid over/under steering
  - Make at least one pass in both directions
  - Make a provisional test run for comparison
- When testing is complete – press STOP

Collecting Data – Uploading Data

- **Data is uploaded Automatically when connected to CARS server**
  - Internet Connection is needed
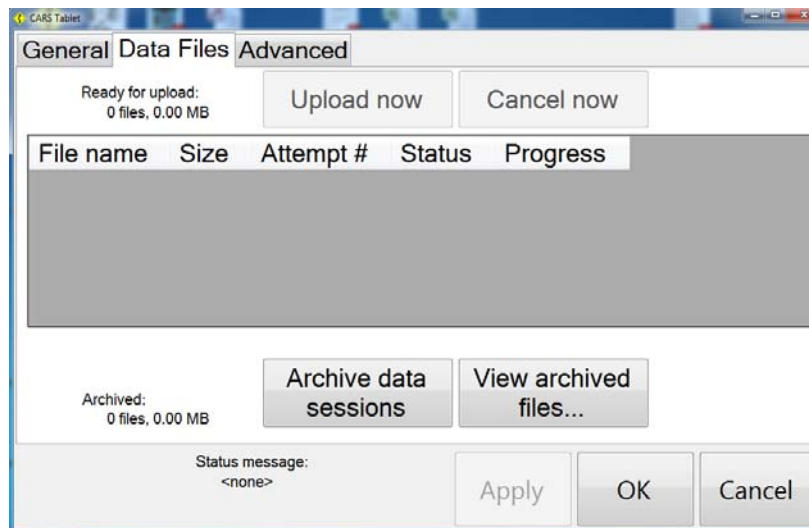 - BBI App needs to be running
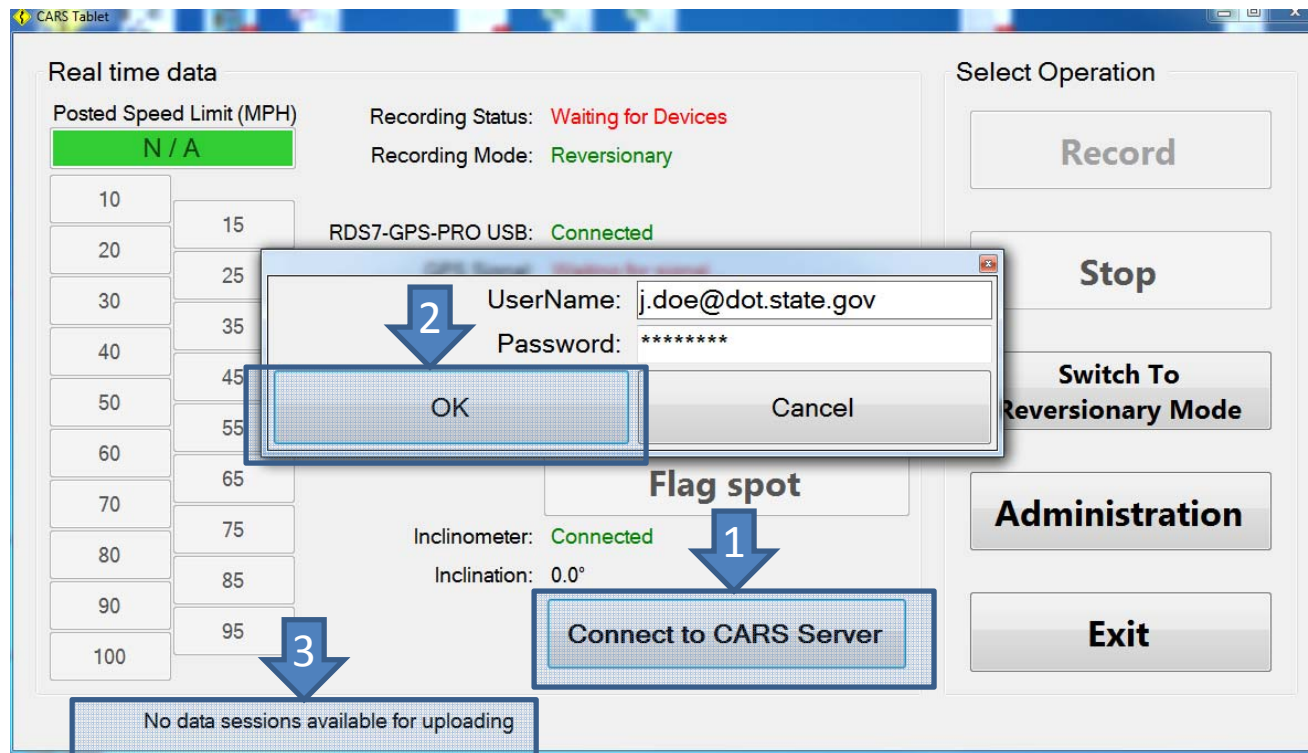
Collecting Data – Uploading Data

- Data is uploaded Automatically when connected to CARS server
  - Tablet needs an Internet Connection
  - BBI App needs to be running
- (Optional) Status can be viewed under Administration Tab
- (Optional) Force Files to Upload and debug
- (Optional) Archive data sessions and View archived files
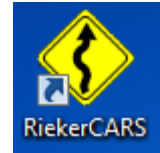
Troubleshooting Connection Issues
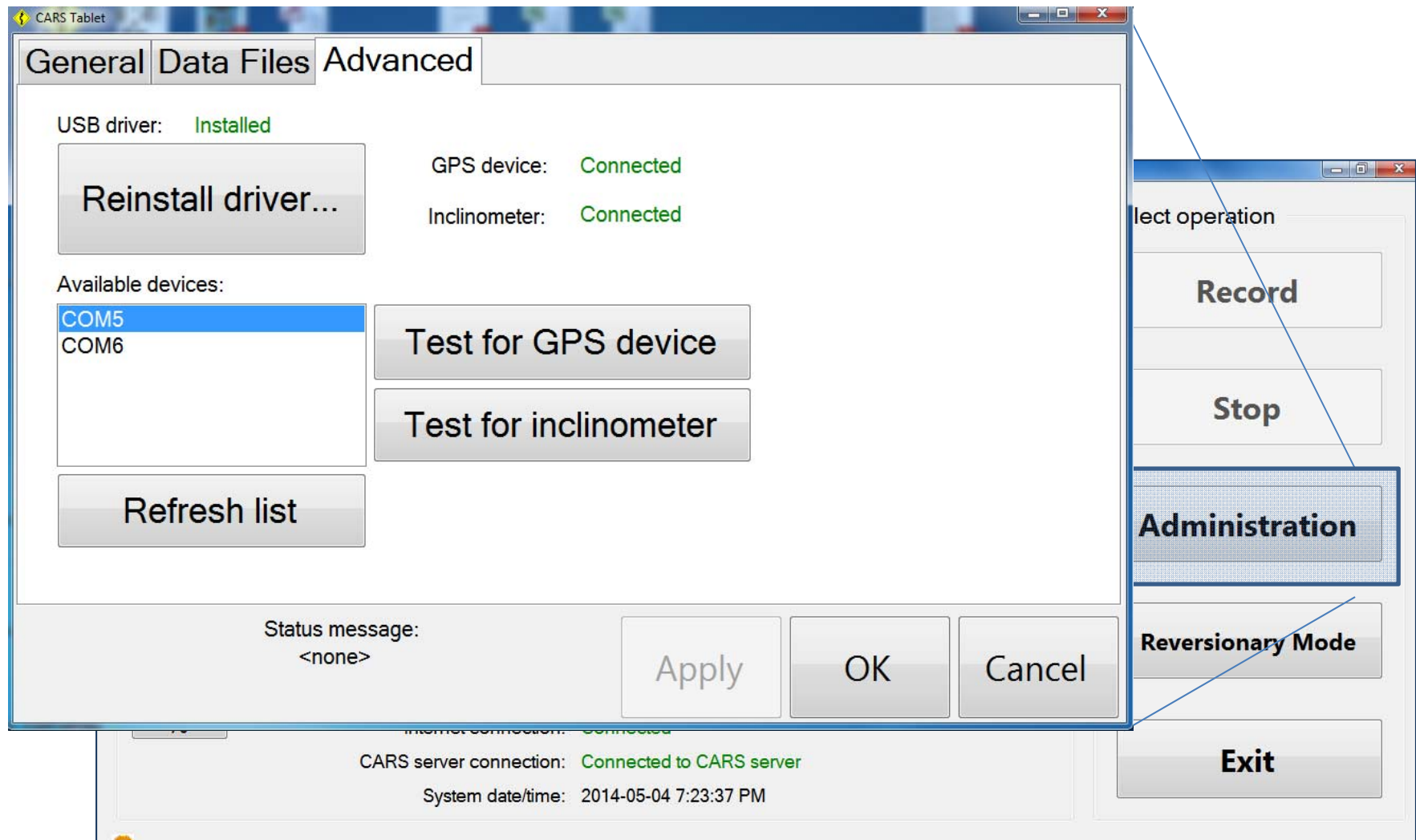
- Select Speed Limit
  - Optionally change the speed limit selection for use in curve reporting
  - Has no affect on Data Collection or Analysis

- Flag Spot
  - Optionally collect a note at a particular point with Flag Spot
  - Flag has no affect on Data Collection

Collecting Data – Reversionary Mode

- ## Loss of GPS signal
    - ### GPS may not be available from time to time
    - ### Try again at a different time

- ## Requires two passes in each direction

- ## Speeds should vary by at least 10 mph

    - ### Speed needs to be held constant

    - ### Use Cruise Control

- ## Radius and Super-e are not be available on Reversionary Report output

Collecting Data – Reversionary Mode

Reversionary Mode Data Collection Screen

Analyzing Data and Generating Reports

Using the CARS™ Internet Portal

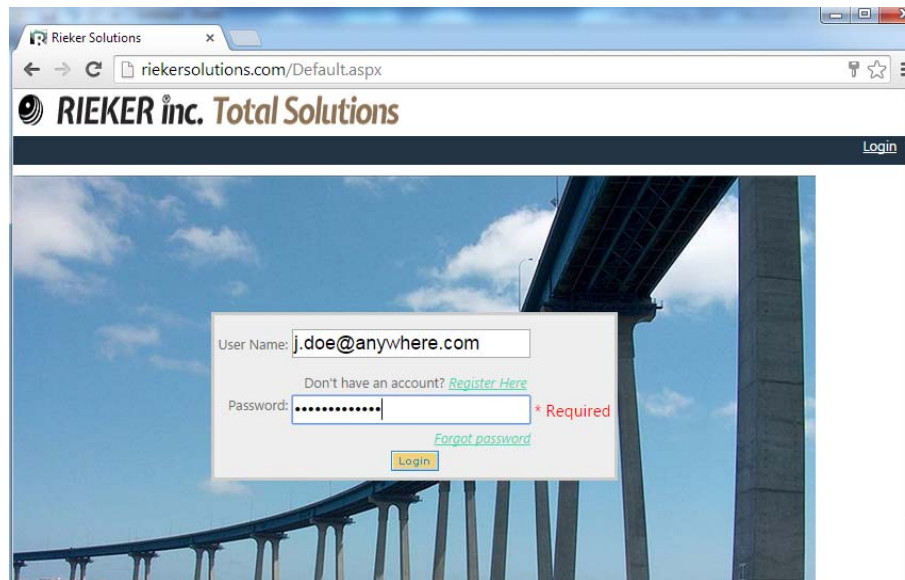## Using the CARS™ Internet Portal

- Logging in to the Portal

- Reviewing Data

- Creating and Saving a Curve

- Viewing and Printing a Report

- Exporting and Saving Data

CARS™ Portal – Reviewing Data

- Go to: http://riekersolutions.com
    - Any internet connected computer or the Tablet
    - Tested with Mozilla Firefox and Chrome™
    - Windows™ Internet Explorer (IE) will not work

- Log in using your username and password from registration
- Forgotten Password can be reset using your Account Key

CARS™ Portal – Reviewing Data

- From the Rieker Solutions Home Page
    - Select My Solution -> CARS
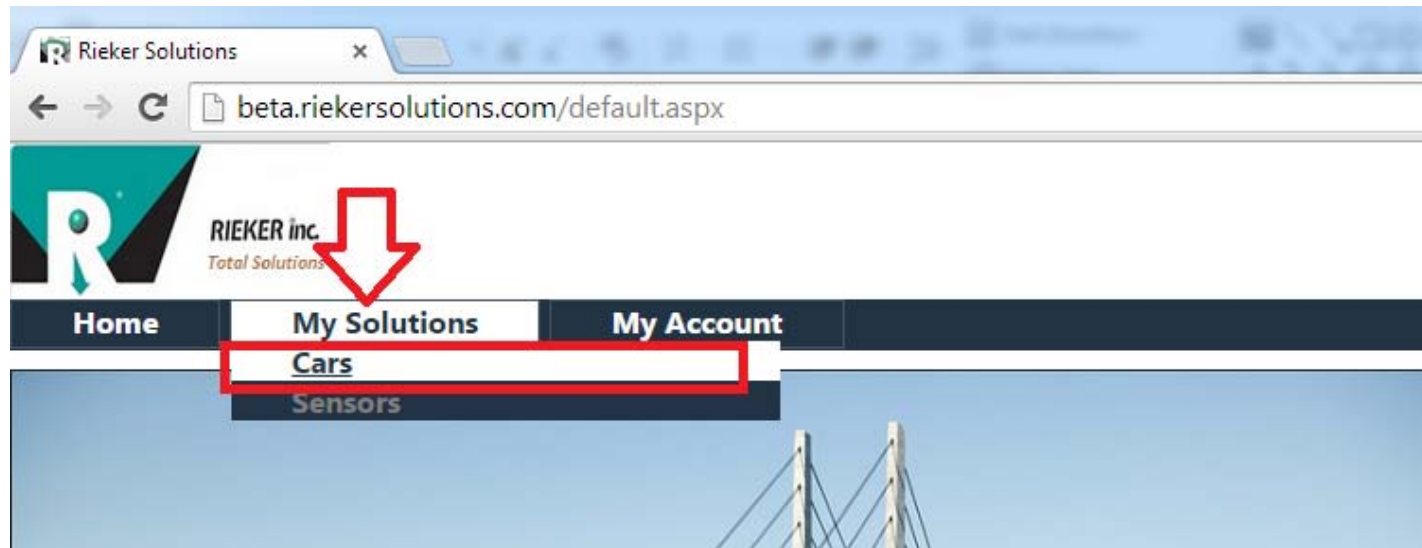
CARS™ Portal – Reviewing Data

CARS™ Home Page

- Data Sessions
- Curves
- Reversionary Data
- Flags
- Mile Marker
- Signs

CARS™ Portal – Reviewing Data

- SELECT Data Sessions using check boxes
- "Zoom to Selected Data"
  - View on Google™ Maps, use Pan and Zoom to review

- Data Session – Green
- Areas of interest – Shaded Yellow to Red
- Curves – Blue
- Flagged Spot – Blue Flag

- ## Zoom into an "Area of Interest"
  - ### Yellow – Red shading indicate areas of interest
  - ### High Zoom levels, each data point appears as a green dot

- ## Select Curve Tab to Identify and Save a New Curve
  - ### Cast a "net" around the points to be used in the analysis
  - ### First click selects the net's center, second click to choose radius
  - ### Adjust the net so that data points optimize PC and PT
  - ### Nudge the PC and PT to maximize the "fit" of each pass

- ## Save the Curve

CARS™ Portal – Reviewing Data

Data Sessions | Curves | Flags | Reversionary Data | Mile Marker Data | Signs

Name	Corridor	Created by	Last saved on	# Passes
<filter>	<filter>	<filter>	<filter>	
Benchmark1 (edit)	(edit)	jcaruso		1
52-Old Kennett Rd Curve 1 (edit)	(edit)	lcurrie		4
52-Old Kennett Rd Curve 2 (edit)	(edit)	lcurrie		4
52- SmithBridge curve 1 (edit)	(edit)	lcurrie		4
52- SmithBridge curve 2 (edit)	(edit)	lcurrie		4
New London-R83	North Curve 27 (edit)	(edit)	lcurrie		4
airport chester creek (edit)	(edit)	lcurrie		2

1 2 … 16 > >>

Passes

#	Fit (%)	Radius (feet)	Length (feet)	Nudge PC	Nudge PT	
1	99.1 %	824.1 ft	1075.3 ft	- +	- +	X

Point of Curvature:
Latitude 39.87615
Longitude -75.59337
Mile marker: [no mile marker]

Point of Tangent:
Latitude 39.87378
Longitude -75.59139
Mile marker: [no mile marker]

Clear selected curve

| Curve	PC lat/lng (degrees)		PT lat/lng (degrees)				
Alabama1003-MP3.04-3.13	39.87615 °	-75.59337 °	39.87378 °	-75.59139 °	save	delete	cancel
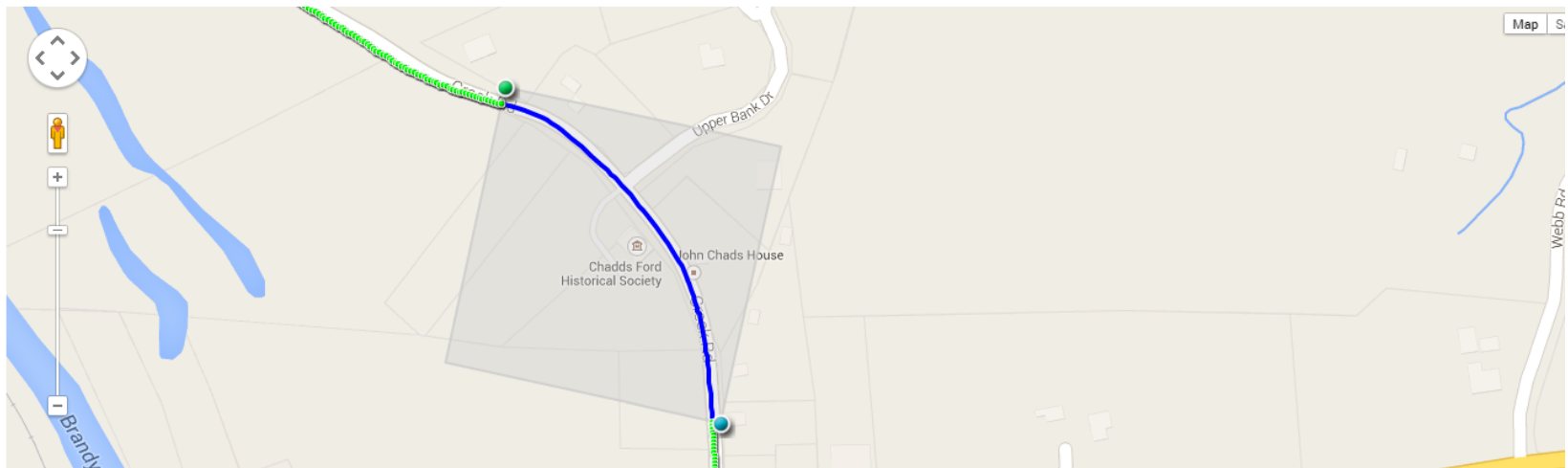
CARS™ Portal – Reviewing Data

- Curve data is modeled as a smooth curve

- Optimize the "Fit" between the raw data and the model

- A fit of 96% or better will yield acceptable results

  - Move the PC and PT so the curves ends just as the road becomes straight or tangent to the turn

  - Bad or curves with erratic data should be deleted

- It is important to include as many data points as possible before the fit starts to break down

  - Selecting only a few points to get 100% fit will not yield accurate results

CARS™ Portal – View Curve Report

Report Screen

- Select the Curve from the Curve Tab
- Click View Report
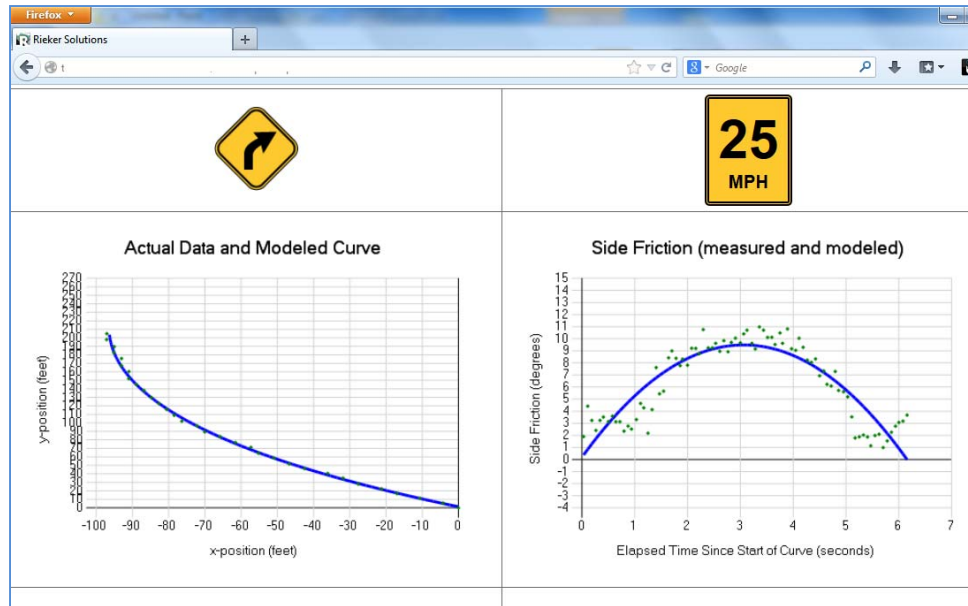
- Adjust limits for local standards
- Export Report Data
- Delete Passes

CARS™ Portal – Reversionary Data Reports

Reversionary Data

- Select two data sessions
    - same curve
    - same direction
- Enter Curve Name and Save
- Delete Curves
- Print PDF report

CARS™ Portal – Reversionary Data Reports

Reversionary Reports Screen

- Adjust limits for local standards
- Review Analysis
- Export Data

CARS™ Training Summary

- Key Take Aways

Topic	Key Take away
Setup	Properly secure and level the device
Field Collection	Drive slow and smooth
Curve Analysis	Include as much data out to the PC and PT before the model (fit) breaks down

Questions?

CARS™ Total Solution for Curve Analysis and Reporting

The CARS™ Total Solution allows you to drive miles of road without stopping, at any speed, and capture all the data you need with a single pass in each directions