V-RIDE Software User Guide

Version 1.5.0.171

Jan 20, 2020
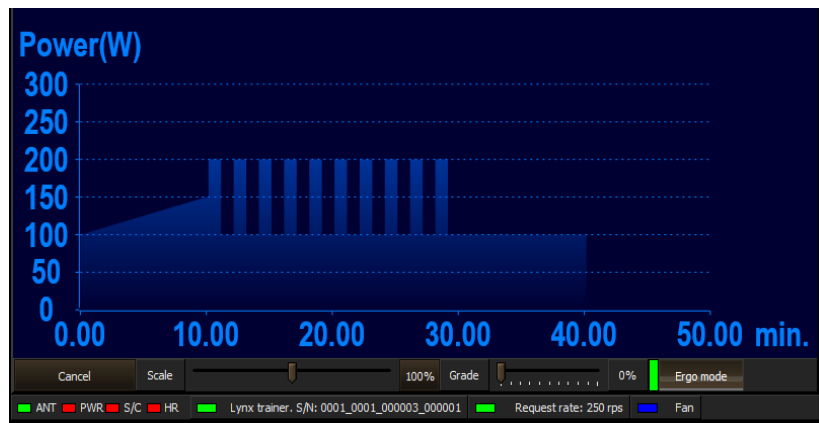
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1. Introduction

V-Ride is PC based indoor cycling training software. It currently supports training with high quality real road videos with complete GPS data and structural training for wattage based workouts. V-Ride software works with any resistance based trainer, assuming you have at least a Speed/Cadence ANT+™ sensor or ANT+™+™ Power meter (much better and more accurate option). The software can also control trainer's resistance/inertia/road grade simulation/etc of advanced the following type of trainers: Lynx, any ANT+ FE-C compatible trainer, KICKR and Computrainer (firmware version 43.45 or higher). In some cases in order to enable advanced trainer control the trainer's firmware must be updated.

2. Prerequisites

V-Ride software requires a Windows PC/Laptop with Windows 7/Window 8 OS and decent graphics hardware. **DEDICATED** (AMD/nVidia) graphics is recommended. It will also work on Apple's MAC under Boot Camp. The software is 64bit and requires a 64bit OS, which is pretty much the case for any modern PC/Laptop.

IMPORTANT. You can easily check if your computer in is good enough using Test mode of software as following:

- Make sure computer is connected to the Internet.
- Download software
- Download demo videos
- Start the software
- Let software update video data (does it from the internet automatically) .
- Click "Install updates" button. (the software/data update process explained in section (9) of this manual in more details.
- Register the software (read section 4.1 user management)
- Click Video button on top of the screen
- Navigate to the folder where you stored your videos
- Select any of your downloaded videos
- Click "Test. Mode" button (right bottom screen corner). This will create virtual rider with 250 watts of power and perform automatic simulated ride of current video. At any point click "Esc" key to end simulated ride.
- During simulated ride you can see if your video plays ok, does not stutter etc. and make your own conclusion if the software performs to your satisfaction.
- If you installed software and videos on portable USB drive/SD card you can go to any computer store connect the drive to any of their demo computers and check if the software works ok.
- Test mode is only available when Lynx or Computrainer are not connected to computer.
- Normal video licensing is bypassed during Test mode. No registration of videos needed.

If you do not have a trainer such as Lynx VR Trainer that is directly supported by V-Ride software, then you will require an ANT+™ USB2 stick or ANTUSB-M stick from Garmin and your bike must be equipped with at least Speed sensor. As of this time, we have tested this with Speed/Cadence sensors from Bryton and Garmin.

The software can also use signals from your ANT+™ power meter and heart rate sensor. It has been tested with Powertap, SRM, Vector, Stages power meters, Garmin and Bryton Speed and Cadence sensors and Garmin HR sensors.

The best way to see if software works for you is to download it along with the demo video from http://www.veloreality.com and do the test on your own PC and trainer.

3. Installation

V-Ride is portable software and as such can be placed and run from anywhere. It creates "data" subfolder first time it is run. It was noted however that some users would place software under "Programs" directory. Windows does not allow writing to such directory. If you try to run software from non-writeable directory you will get following warning message:
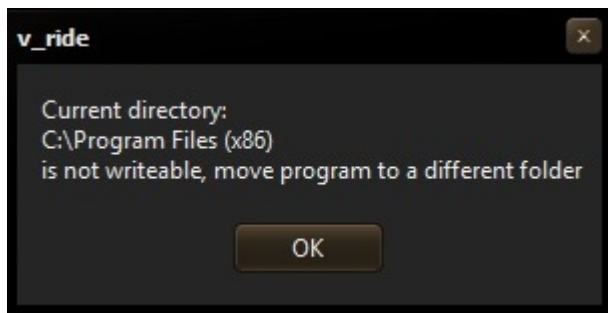
And the software will shut down. Place software in different directory that allows writing to.

Also since software comes as zip and Windows shows zip archives as a folders people just double click zip archive and then on the executable inside the archive. At this point windows silently extracts executable file into some temporary folder and runs it from there. NOT very good idea since all settings will be lost once the software is shut down. It is recommended that you first create some folder on your computer where you want to keep the software and your data, extract the executable into that folder and run it from there.

Before running software make sure that your PC is connected to the Internet. When running software for the very first time you will see following introductory screen outlining few basic rules:
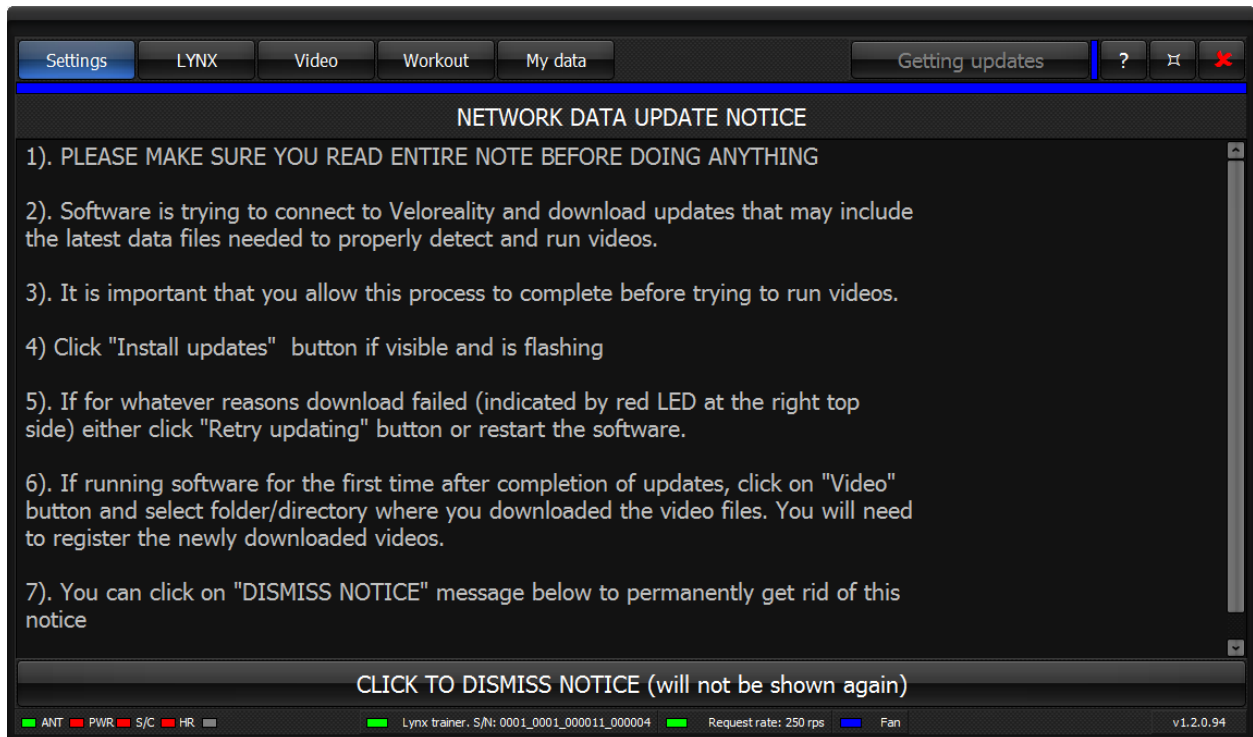
Clicking bar on the bottom of this screen will permanently get rid of this introductory screen (that Is unless you copied executable to new folder),

Warning: always pay attention to the presence of "Install updates" button in the top right part of the screen:
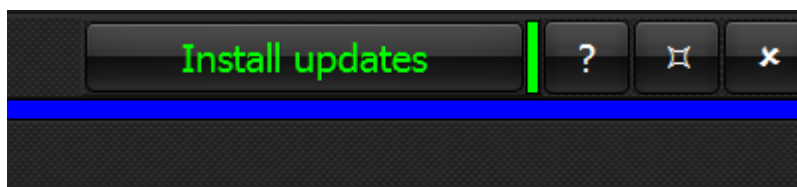
You may have purchased videos but software still has to obtain correspondent data files for those videos. Clicking "Install updates" will update the software when new version is available. It will also download data files for videos. Some updates are installed automatically and do not require user actions.

Freshly installed software does not have these files and unless you click "Install updates" you will not be able to use any videos.

After the software performed self-update you will be presented with the following "Settings" screen:
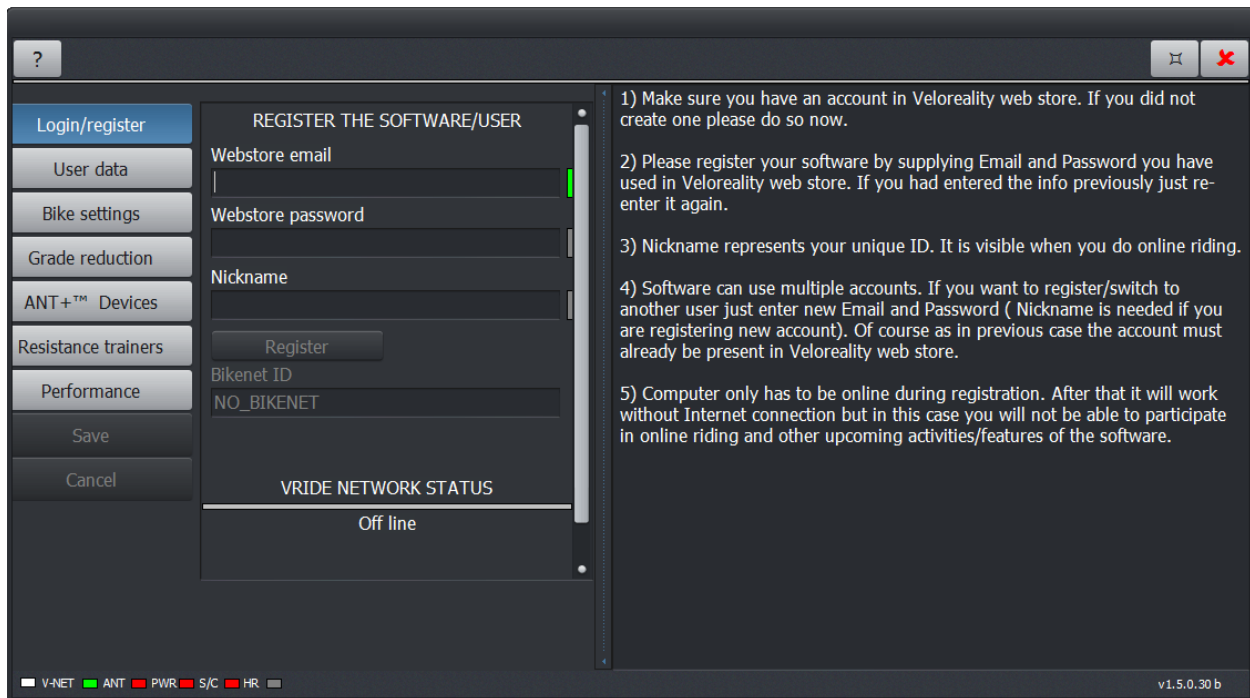
First thing you do here is register your software. Enter credentials you used on Veloreality web store (Read section 4.1 User Management).

The software normally starts in full screen mode. Clicking "**F11**" key on keyboard or "**Full Screen Toggle**" button [icon] in top right corner will toggle it from full screen to a normal resizable state and back. Clicking "**Close**" [icon] button in top right cornet or "**Alt-F4**" key combination will terminate the software. Clicking button marked with question sign [icon] will show "**About**" screen.

4. Using as a bridge between Lynx trainers and any 3rd party software compatible with ANT+™ FE-C protocol

This will let Lynx trainers to work with the software like Zwift™, PerfPro™, TrainerRoad™, BKool™ etc.etc.

When Running VRide software with the Lynx trainer connected you will see button labeled FEC on top of the screen:
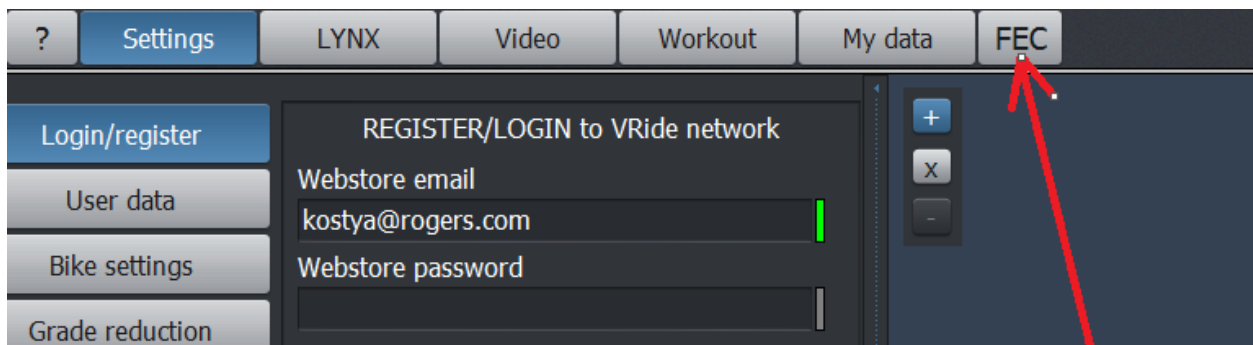
Pressing this button will shutdown VRide software and launch bridge software called V_Bridge. It translates all internal Lynx trainer commands and status messages from/to ANT+™ FE-C protocol. V_Bridge software will need one extra ANT+™ stick.

It is important that you start V_Bridge software not directly but using "FEC" button in main V_Ride software as at this point it transfers calibration, ANT+™pairing data etc to V_Bridge.

Some 3rd party software will grab every ANT+™ stick available on the system so there will be nothing left for V-Ride. In this case start V_Ride/V_Bridge before starting that 3rd party software.

Small diagram explaining how the whole setup works is shown below:
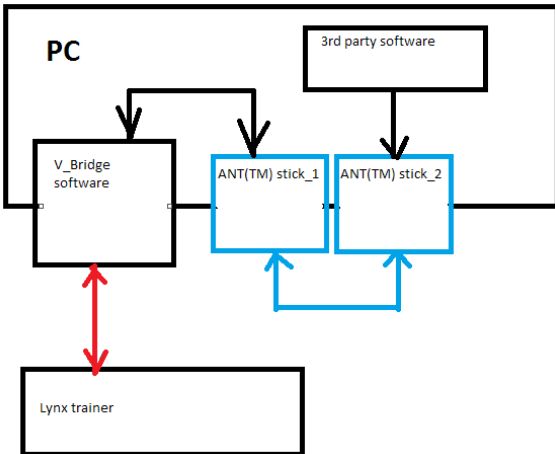
The end result is that any 3rd party ANT+™ FE-C compatible software sees Lynx as yet another ANT+™ FE-C trainer that it can control.V_Bridge software looks like this:

It shows status of Lynx, ANT+™ devices and commands/status messages. V_Bridge just as V_Ride software can use ANT+™ compatible power meter and cadence sensors to improve working of Lynx. You can't however configure ID's of ANT+™ sensors. They're configured in main V_Ride software. V_Bridge picks up all the parameters from V_Ride. Configuring ANT+™setup in V_Ride is described in section 5.5 (ANT+™ devices section) further in this document.

When using V_Bridge it is advisable to start it before 3rd party software. Reason being that some applications like Virtual Training will not cooperate. They'll grab all available ANT+™ sticks in the systems leaving nothing for V_Bridge to use. Virtual Training constantly hunts for new ANT+™ sticks in the background and if V_Bridge is shut down and restarted it will not find ANT+™ stick to work with so if you need to restart V_Bridge for whatever reasons you will have to shut down Virtual Training first.

Other software like Zwift is way more cooperative. It'll grab first available ANT+™ stick and stay with it. In this case there is no difference in what order V_Bridge and Zwift/other software was started.

Slider in "Send simulated FE-C power" section of the screen if set to value other than 0 will cause V_Bridge pretend that somebody is riding the trainer at the power specified by slider position.

Colors of LED to the right side of particular ANT+™ sensors (power/cadenc/etc) signify following sensor states:

- Gray – sensor is not configured and not used

- Green – sensor is configured and active (person is riding)

- Blue – sensor is configured and alive but not active (person is not riding)

- Red – sensor is configured but not sending any signals. At this stage V_Bridge will constantly reinitialize ANT+™ channels and try to pair to sensors again.

5. Configuring software (Settings)

5. 1.   Registration and user management

Starting with version 1.5.0.30 you are required to register the software before using it. For this enter email/password you've used on Veloreality web store. If you did not register yourself on web store then do so before anything else.

Once you registered enter email and password you used to register on Veloreality web store, enter desired nickname and click "Register" button. You can register multiple users (of course you have to have separate Veloreality web store account for each new user). If you have more than on user then clicking "Auto login" button to make particular user automatically log in upon program start up.

If you registered for online riding before the update to version 1.5.030 or higher you would need to re-enter your Veloreality email, password and desired nickname.

Your nickname will be used to represent your avatar when riding online. If your computer is not online you will still be able to ride videos but online features will obviously be disabled.

5. 2. *User settings*

After creating your user identity, you can configure your own user settings, and these will be saved on a "per user" basis. Click on "User data" button for this step.

Most of these are self-explanatory and it is important that you enter correct values since they are all used in calculations during your training. For explanation of "Segment performance strategy" setting read section 8.8 of this guide

This is especially important if you are using the Lynx Trainer which is capable of providing a very realistic riding simulation. Same applies to Wahoo KICKR, Computrainer and whatever other computer controlled trainers we might support in the future.

If for example you entered your weight as 100 kg while the real weight is only 60kg you would feel like you are riding a fully loaded touring bike with 40kg of extra weight.

Specifying your default bike as Road or Time Trial, will change your air drag coefficient, which again will be very accurately reproduced in the resistance that would be provided by the Lynx trainer.

5. 3.   *Bike settings*
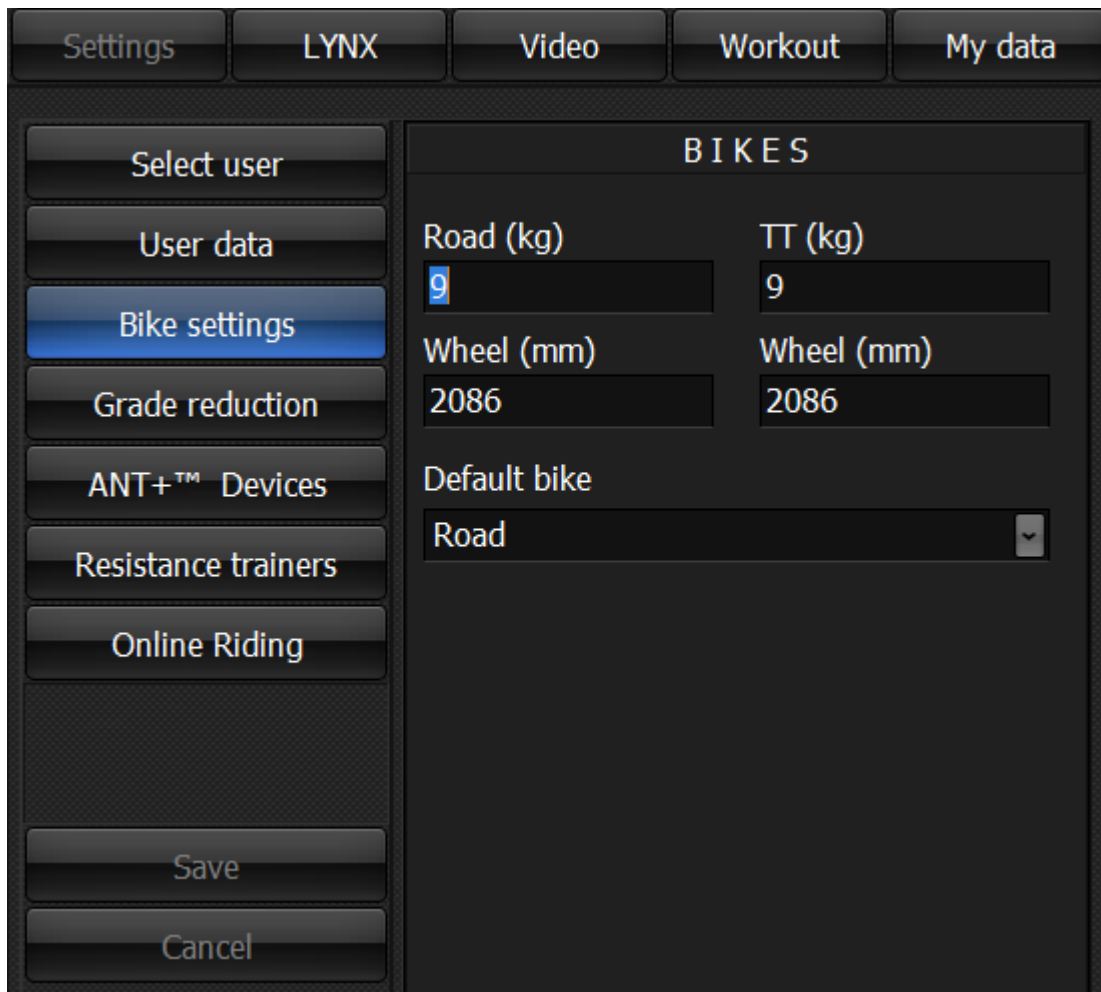
These are pretty much self explanatory.

5. 4.   *Grade Reduction*

"Grade reduction" settings lets adjust what current road grade "feels like". Basically it acts as sophisticated virtual gears on your bike. Of course it only works for computer controlled trainers - Lynx, Wahoo KICKR, any ANT FE-C compliant trainer etc. For so called "dumb" trainers it has no effect.
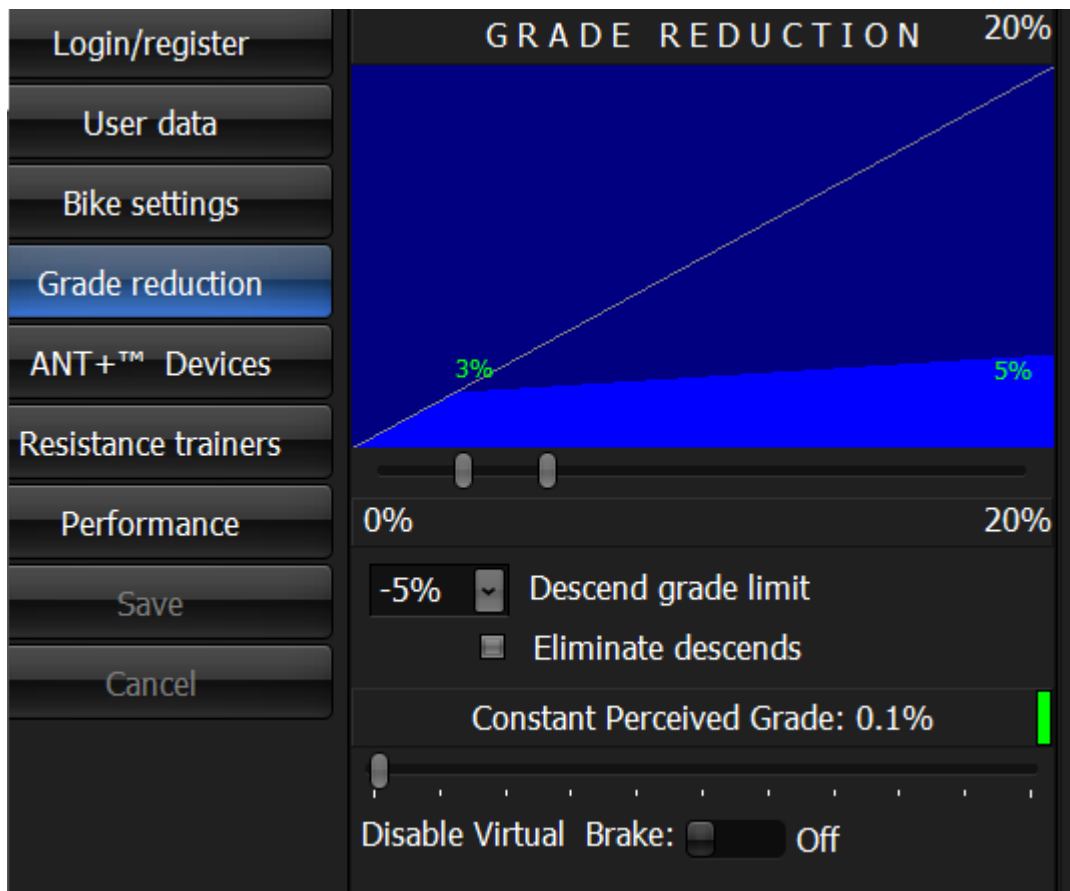
For example you want to ride particular route but it has, let's say, a long stretch of 15% road grade. Some higher end trainers including our own Lynx VR Trainer will faithfully reproduce this grade even at very low speeds and if your bike is not equipped with proper gears or if you simply do not feel like busting your knees, you might want to limit the road grade. This is roughly equivalent to adding some extra virtual gears to your bike

- moving the left thumb on the slider will set the limit below which grades will not be affected and training grades will correspond to real grades.

- moving the right thumb on the slider will set the absolute maximum grade.

You will experience real road grades until the grade percentage value set by left thumb. Grades beyond that will be proportionally scaled to not exceed value determined by right thumb on slider.

As an example, below is the setting that will let road grade grow up to 3% unchanged and completely clamp every grade above it to the same 3%.

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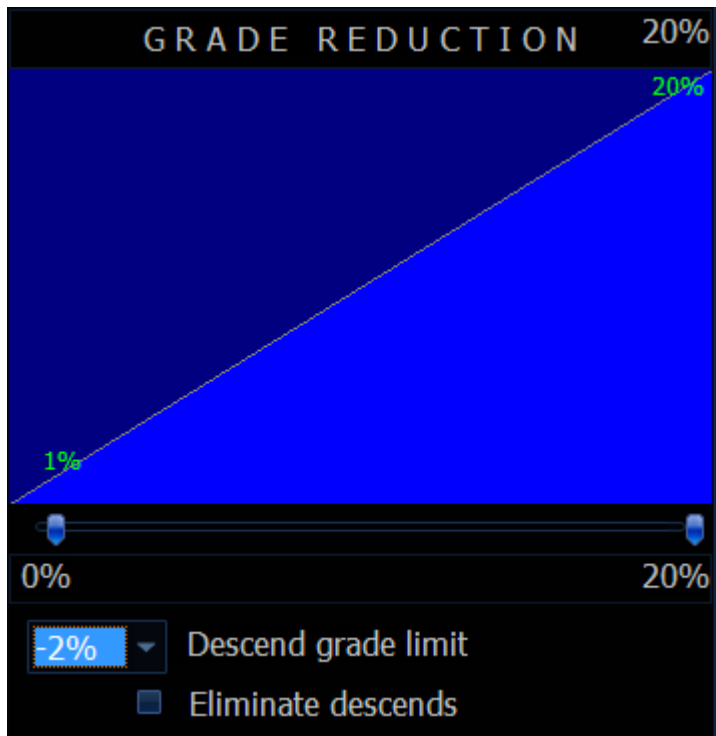
As you move sliders you will also see instant graphical representation of grade reduction.

Some trainers have motors and are capable of simulating negative road grades. For this case "Descend grade limit" setting can be set from 0% down to -5%. The reasoning here is that your route might have long stretches of negative road grade and while those are nice in real life, there is not much point in sitting on a trainer and watching your wheels spin without any effort from your side.

"Eliminate descends" option clamps all negative grades to 0%. This option is however different then "Descent grade limit". "Descent grade limit" does not let trainers that are capable of motoring to simulate grades below certain limit but the video still moves with the speed you would be moving if the grade was un clamped. "Eliminate descends" forces data in road profile to set all negative grades to 0%. Your maximum virtual speed will be reduced accordingly.

"Constant Perceived Grade" slider when enabled (>0) will let you ignore all above road grade settings. For example if you set it to a value of 1.1% then all road will feel like 1.1%. On screen speed will be still calculated correctly. This option was introduced due to numerous demands from people who like to adjust resistance by just simply changing gears on their bike.
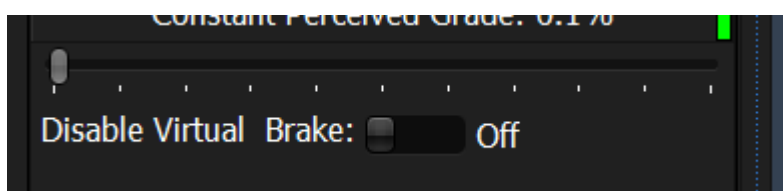
"Disable Virtual Brake". When your system (PC and the software) can not maintain high enough video frame rate to catch up with the calculated cycling speed it will artificially slow down calculated bike speed. This may happen for example when filming vehicle was moving very slow on descends because of sharp turns. Setting "Disable Virtual Brake" to "On" state will cancel this feature. In this case when video falls too far behind from calculated position it will perform hard jump.

5. 5.   *ANT+™ Devices*

WARNING : Often users of various Garmin device will have ANT agent installed on their PC. It's presence can be recognized by having "ANT Agent.exe" or "Agent.exe" in the list of processes in Windows Task Manager. The software will try to terminate the process automatically. If for whatever reason automatic termination fails the Ant agent will prevent software from recognizing ANT+™ stick.

In this case Uninstall/Disable Garmin ANT Agent or if not possible/desirable kill "ANT Agent.exe" process using task manager. Unplugging and plugging back ANT stick while V-Ride software is running will usually do the same trick.

WARNING: the software will not support very old 4 channel USB1 stick.

Other then that the software should generally just work with all standard ANT+™ and ANT+™ FE-C compatible sensors/trainers/sticks/etc

Plug your ANT+™ stick into USB port of your computer. At this point windows might try to download and install ANT+™ drivers if it did not have those installed previously. If for whatever reason Windows can not automatically locate ANT+™ device/drivers download and install drivers manually from the following location:

http://www.thisisant.com/resources/ant-usb2-driver-windows .

WARNING: ANT+™ devices use very low power for communications and as such may be affected by RF interference and distance. In order to minimize potential signal loss it is highly advisable that you put ANT+™ stick/receiver as close as possible to your sensors/trainers using USB extension cable.

 Then start the software. The first thing is to check that the V-ride software has recognized your ANT+™ stick. ANT+™ status is indicated by ANT+™ status bar located in the left bottom part of the software screen:
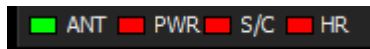
Leftmost LED in the ANT+™ status bar is green when the software did recognize ANT+™ stick and RED when it did not. The rest of LEDs are responsible for showing status of various ANT+™ devices. Dealing with ANT+™ device setting/pairing/etc. is described in section XXX of this manual.

If your ANT+™ stick is recognized you will see leftmost ANT+™ status LED in green. If the ANT+™ stick is not recognized by V-Ride software, then unplug/plug ANT+™ stick which should fix the situation.

Next, pair your ANT+™ stick to your sensors. Assuming that you already have all your sensors and your bike is mounted and ready to go, click the "Search" button on the "ANT+™ DEVICES" section of the screen and start pedaling. Before ANT+™ pairing process you will see the following ANT+™ status:

Green horizontal bars indicate presence (green color)/absence (red color of ANT+™ stick).

Click "Search" button sit on your bike and start pedaling. You will see list of currently found devices. May take a while to populate:

 At any point you can click "Stop search" to stop the pairing process or the software will automatically stop searching after 30 seconds. You can repeat process if needed by clicking search again. After completion of the search the software will try to select best combination of ANT+ equipment.

Below is the example of how it automatically assigned ANT+ sensors:
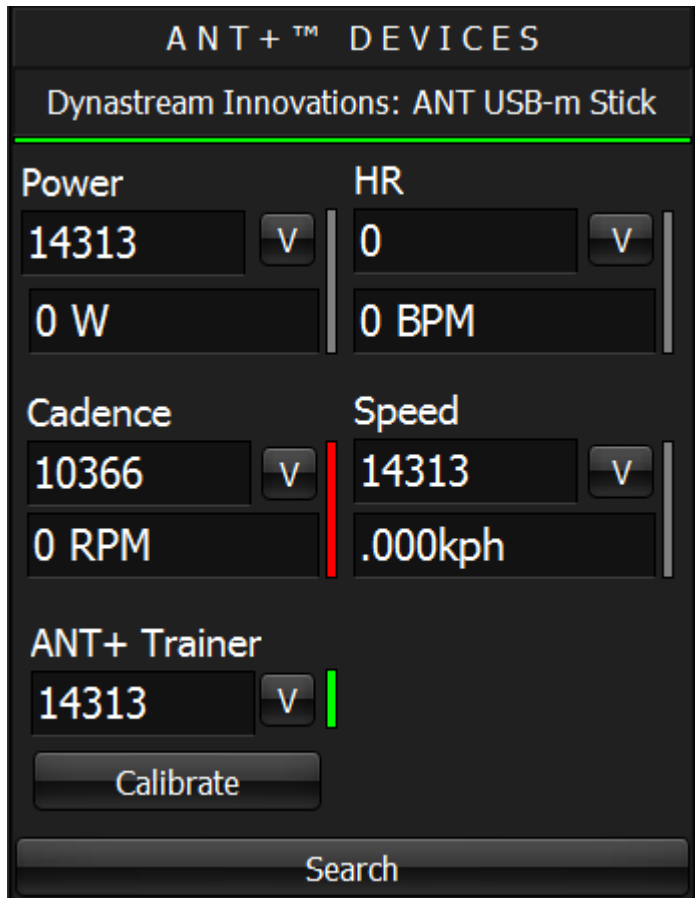
Notice couple of things here. Every ANT+ device found has corresponding Device ID listed directly under device name. If the device is currently active then the bar to the right of appropriate device section is green color alternatively the color is red. In some cases the bar is of gray color. That is is the data will be supplied by alternative sensor. In this particular case (screen above) Power and speed data will be taken from currently found and active ANT+ smart trainer (it has green bar beside). The cadence is red because by the time screenshot was taken the sensor already went to sleep mode. You might have and want to select other sensors. Normally real power meter is way better then ANT+™ generic trainers at estimating power for example. Same goes for cadence sensor if your power meter is not pedal/crank based.

In order to select alternative sensor click the box to the side of appropriate Sensor ID. The screen below shows us choosing real power meter for power measurements rather then the power coming from trainer:
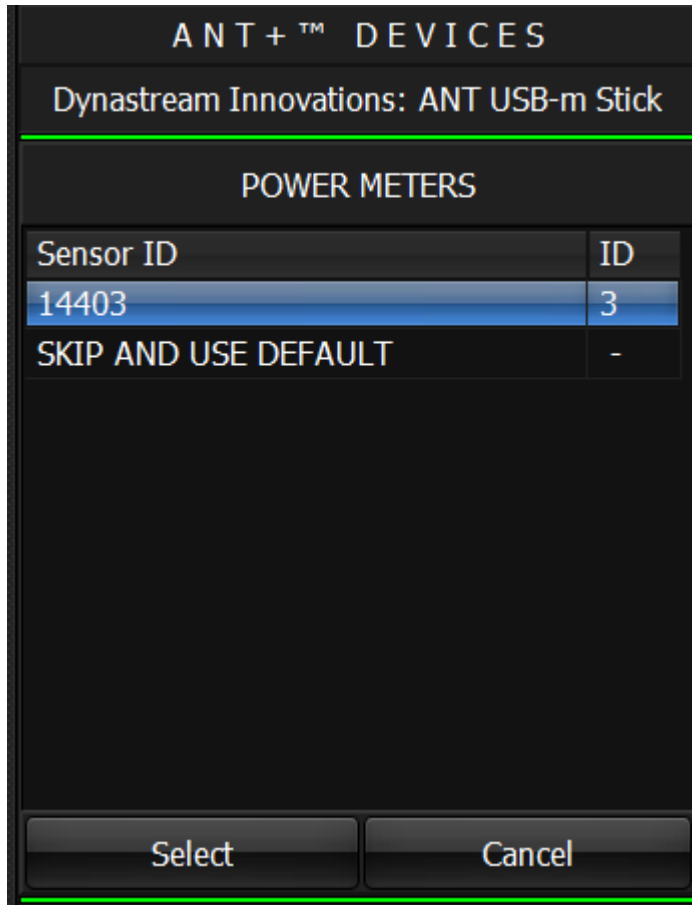
Clicking selected row with particular Sensor ID and then clicking "Select" will tell software to use this sensor. Clicking "Cancel" will abort the operation and leave old Sensor ID intact. Clicking "SKIP AND USE DEFAULT" will unpair current sensor and will use values from default sensors if those are available.

Below is the screen that shows that the source of power was changed from the default coming from smart trainer to real power meter:
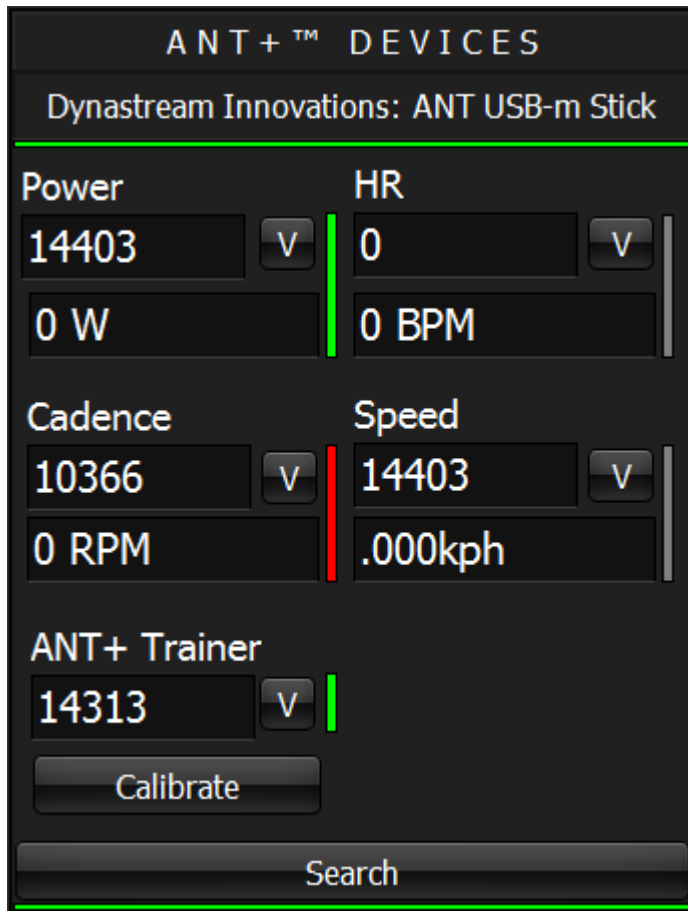
Your current ANT+™settings will be automatically saved and used by default upon start up.

Notice for SRM users: When you have SRM power meter the software will detect it. Spin pedals few times and then stop. After a while you will see SRM torque offset value (right field on screen) filled up (by default it is 420). At this point small button with "<-" sign will become enabled and if you click it will retrieve and propagate torque offset value to the left field and stored in the software.
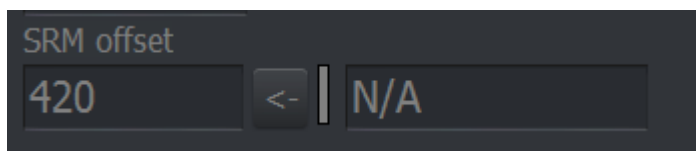
Keep in mind that ANT+™ settings are being saved individually per user. Before configuring ANT+™ you might want to create and configure your personalized user profile. In order to do so read the section 4.1 of manual.

Clicking "Stop coasting after 5 sec" checkbox will prevent smart trainers from coasting downhill indefinitely.
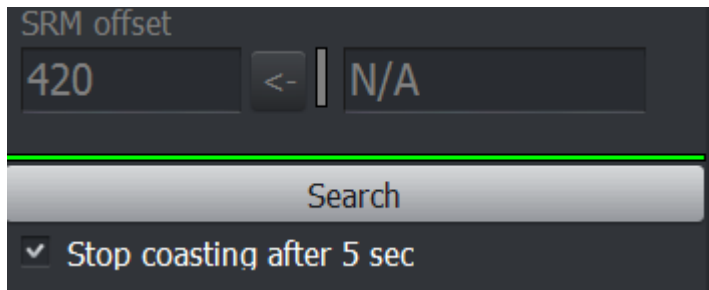
IMPORTANT !!! Keep your ANT+™ configuration current. For example if you had it set up with HR sensor and later that sensor is gone for whatever reasons the software will constantly keep looking for it. In this case you need to refresh your ANT+™ configuration. Click "Search" button and proceed with the pairing as described before.

5. 6. *Resistance trainers*

These settings are only if you have not computer controlled simple resistance trainer that does not transmit any power data and you only have ANT+™ speed/cadence sensor and not power meter. In this case the software will be able to figure out approximate power using published power vs speed curves for variety of trainers. In order for the V-Ride software to work with general resistance based trainers you must have ANT USB2 Stick or ANT USB-M Stick and at least a Speed ANT+™ sensor. The software will automatically calculate power based on your current speed and one of built in power vs. speed curves for particular trainer. If you do have ANT+™ power meter then even better. It will be able to utilize the value to translate it into speed
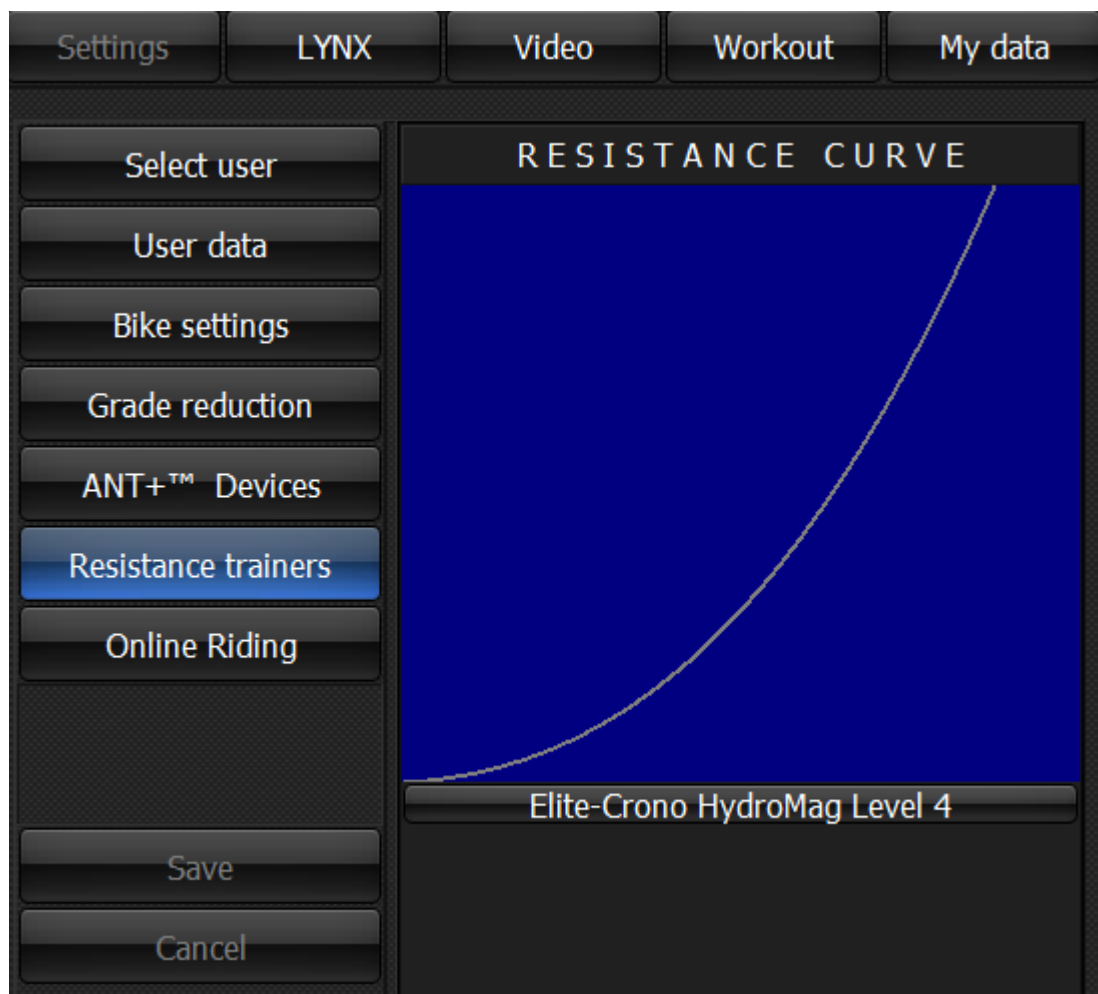
To select one of predefined trainers or create your own one click anywhere on blue curve area. This will bring you to a screen where you can choose one of the many available trainers or create your own one:
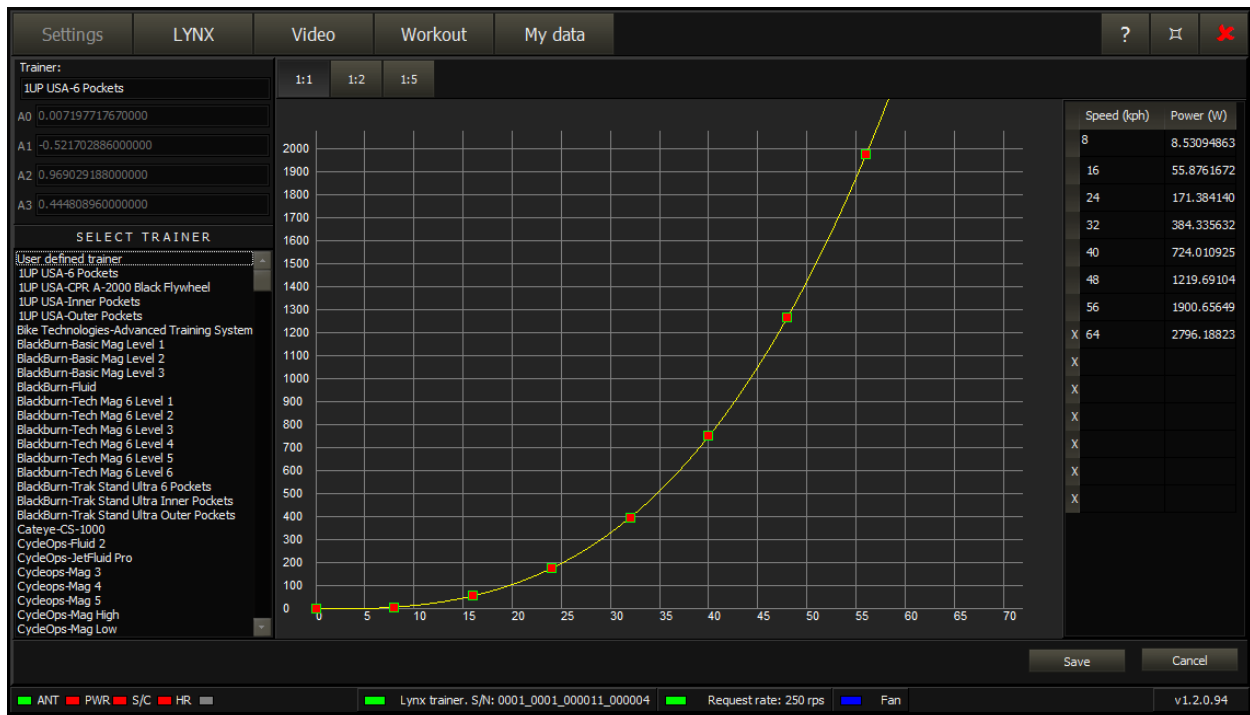
In this screen you can select any resistance (power vs speed curve) for various trainers. Select the on you have from the list on the left. If your trainer is missing in that list you can create power vs speed curve yourself. Normally it can be done in two ways. If you can borrow power meter then measure power at few speeds write down results and then fill the table in the right part on the screen. As you fill table you will see resistance curve appear. Alternatively many manufacturers present such data in their user manuals or post it on the web as some graphs. In this case just take few points from such graph and enter it in the table.

When entering table first select "User defined trainer" in the list on the left. It is good idea to send use the table you made since we will include it in further software updates for the common good.

6. **Live map of V-Ride network**

When successfully connected to VRide network you will see the live map showing all routes available on VRide network and all cyclists currently riding those routes
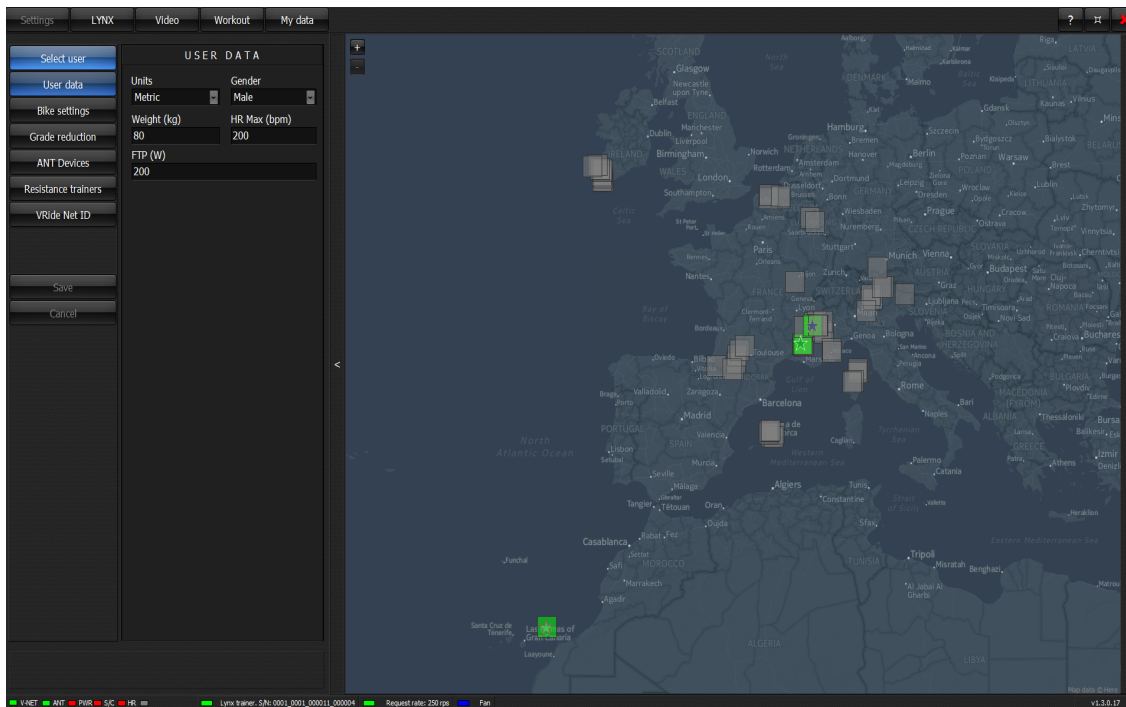
Routes with no riders are represented by gray squares. Routes with the riders – as bluish squares. Individual riders are represented by Star shapes. Hovering mouse over square brings out name of the video. Hovering mouse over cyclist shows cyclist's nick name. The map can be zoomed into by either clicking small button marked as "+" in the top left corner of the map, by double clicking point on the map (the point must be outside of square or star) or by usinc scroll wheel of a mouse. At some zoom level you will see the actual tracks:
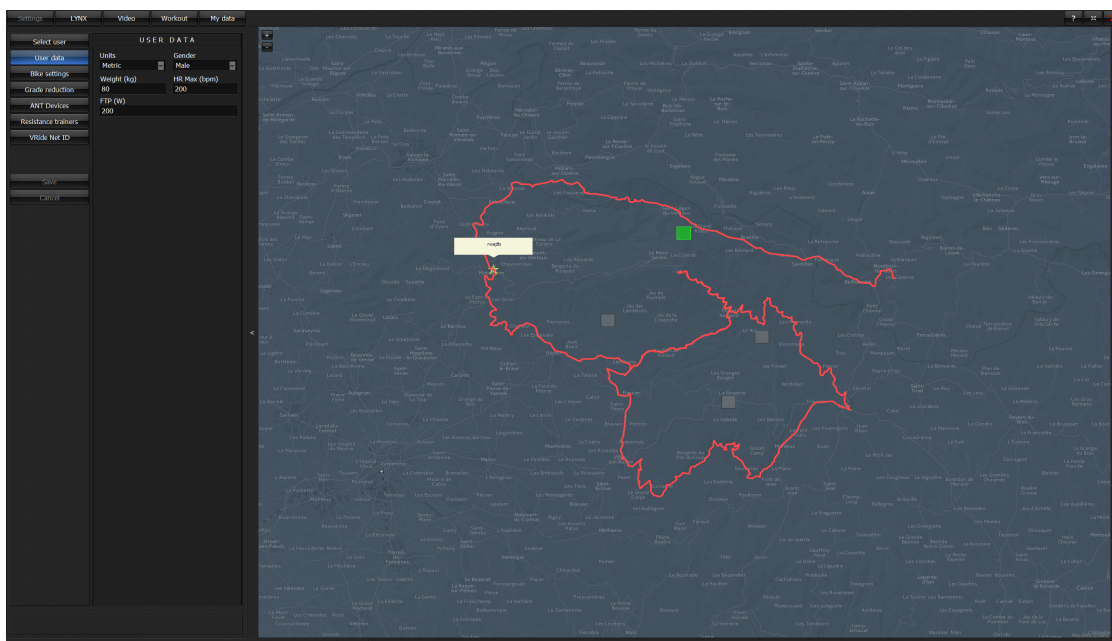
Clicking small "-" button in left top corner of the map will zoom out.

Clicking "X" button will reset map to it's default zoom level and location.

Clicking table button "…" will show live table listing rider's Nickname, current power in watts and the route name.
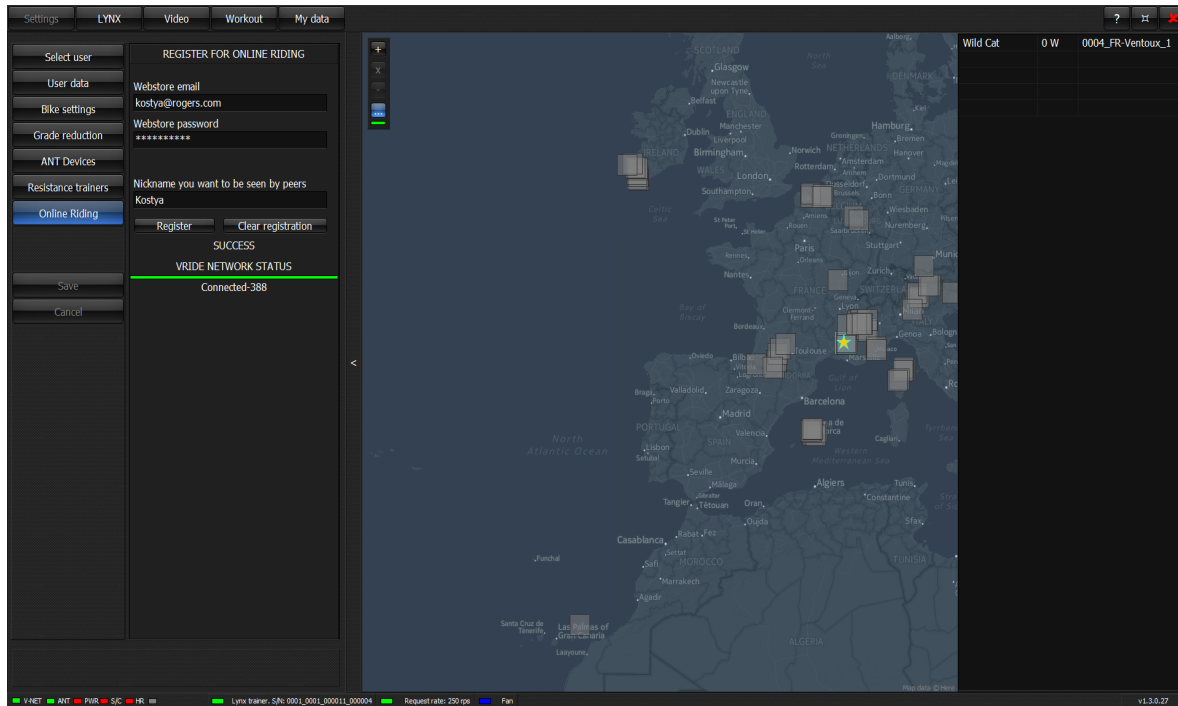
7. Configuring software for some particular trainers

7. 1.   Installing as a part of Lynx trainer package

WARNING: Do not ever apply the brakes to stop if using Lynx trainer. This will cause trainer to stop immediately and huge red prompt telling you to not use brakes will show up. It is somewhat harmful to electronics and may damage it if used often. The only proper use of break is if you have real emergency. Normally you can dismount from the trainer even when it is coasting. It will stop on its own after a little while. Using fixed gear bicycle leads to the same situation so using fixed gear bikes is discouraged.

WARNING: Lynx does not include its own cadence measurement. As a result it might not be able to reliably stop the motor even after you quit pedaling. Always use Lynx in combination with ANT+™ compatible adence sensors. Alternatively if you have any of the supported power meters and missing separate cadence sensor then cadence will be taken from power meter.

WARNING: Lynx is capable of measuring power on its own and it is reasonably accurate/precise. However we do not pretend to compete with precision and accuracy of power meters. If you do have separate power meter the software will continuously self-calibrate trainer in real time during riding so it always matches your power meter.

First go through initial set up process described in Section 3 Installation of this manual. If you've purchased a Lynx VR Trainer from VeloReality Corp., the V-Ride software and accompanying HD videos with road profiles come preinstalled on a portable USB drive. Before connecting that USB drive to your computer connect USB cable that comes with your Lynx VR Trainer to your computer. At this point Windows will recognize the Lynx VR Trainer and install drivers automatically. Since Lynx acts as standard HID (Human Interface Device) input device, the necessary drivers are already part of Windows and Windows does not need to locate those. After Windows installs the HID drivers for Lynx VR Trainer you should be able to see "Virtual Cycling Trainer Device" in the "Control Panel" under "Hardware and Sound/ Devices and Printers" section.

At this point you are ready to run the software for first time. Connect the supplied USB drive to your computer. In the root folder of that drive you will see v_ride.x64 file. Double click on it to run and pay attention to what is at the bottom of the screen. Basically you should see Lynx status bar:
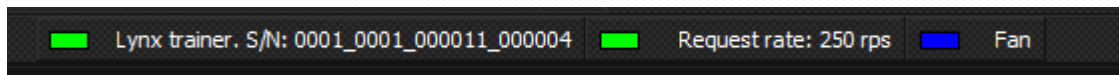
 Leftmost LED indicating presence of Lynx must be green. Next LED showing quality of communication to Lynx must also be green and Request rate should stay at 248-262 rps range and be stable – no jumping numbers. If you do not see the picture above (LED's are yellow/red, request rate is not in range) try to unplug and plug again USB cable that connects Lynx to PC/select different USB port. Do not ever use USB ports on keyboard/monitor/unpowered USB hub to connect Lynx.

If the Lynx VR Trainer was successfully recognised by the V-Ride software, you are now ready to perform the initial Lynx setup.

Click on "LYNX" button/tab at the top of the screen. This will bring you to Lynx setup/calibration screen:
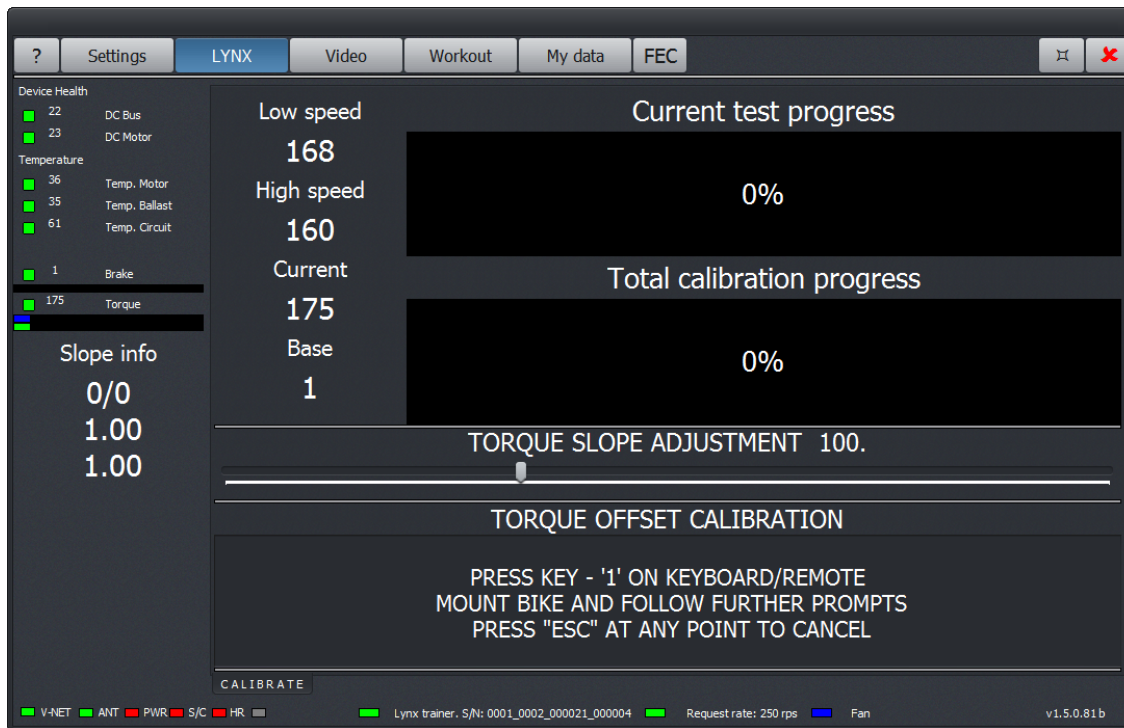
First make sure that "Current" torque value stays in the 140-190 range with the best value being around 150-170. If it is not then adjust value by slightly turning torque adjustment plug located at the bottom of your trainer until the value is within the limits. It is extremely rare that you would need to adjust the knob and it is HIGHLY RECOMMENDED that you first contact veloreality by phone/Skype so they can guide you through the process. .
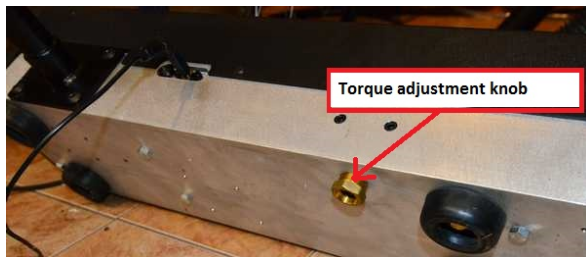
WARNING: There is no need to adjust torque knob starting since Lynx II. It is actually replaced by a plug.

At this point you can perform "TORQUE OFFSET" calibration by following on screen instructions. "TORQUE OFFSET"calibration measures basic drive train losses and corrects resulting torque offset. After performing initial calibration it is best to ridde trainer for 30 minutes or so and repeat calibration process again. Before doing "TORQUE OFFSET" calibration set "TORQUE SLOPE ADJUSTMENT" to value of 100.

After finishing with "TORQUE OFFSET" if you own/can borrow ANT+™ compatible power meter it is a very good idea to perform "TORQUE SLOPE" calibration.

To calibrate "TORQUE SLOPE" click "Torque slope" checkbox or press key "2" on keyboard/remote. Set bike to a lowes gear as the resistance during this test will be very hight and then start pedaling. Pedal at very constant power while keeping it above 200 watts. The software will perform steady state checks and when your power is above 200 watts and stable enoug the upper progress bar will reach 100%. This takes 30-40 seconds. After that keep pedaling at the same power. In about another 30 seconds the lower progress bar will be filled and the test will complete.

Your pedaling efforts on Lynx are calculated by monitoring instant torque values. If you do not produce sufficient torque for few seconds the trainer will stop and the ride will pause. It is a safety feature. Lynx can simulate downhill condition you do not want your wheel rolling indefinitely at 70kph. Wait before trainer comes to stand still before dismounting. This feature might pose inconvenience if you are riding downhill and soft pedaling or almost. However if you use ANT+™ cadence sensor then the software will use cadence from that sensor instead and since it represents true rather than calculated sensor you can soft pedal to your heart's content. Trainer will still stop if you stop moving pedals all together for a few seconds.

7. 2.   *Installing for use with generic ANT+™ FE-C trainer*

ANT+™ FE-C is newer protocol intended to control various fitness equipment. Our software supports it in parts that deal with controller cycling trainers. When connecting software to a trainer try make sure that ANT+ stick is placed in close proximity to a trainer. Use USB extension cord if needed.

Below is a picture of ANT+ settings and status bar showing ANT+™ FE-C trainer linked to software:
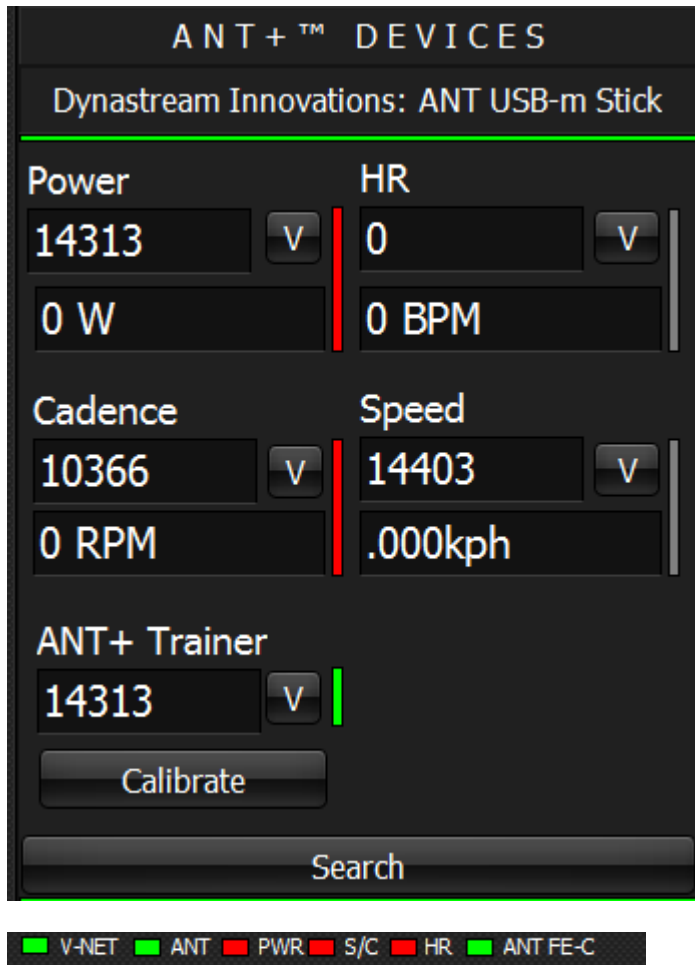
Clicking "Calibrate" button will bring you to calibration screen (spin down test). Just follow the on screen instructions. WARNING: calibration support depends on particular trainer and might not be implemented on trainer's side (Tacx Neo for example). In this case just ignore it.

7. 3.   Installing for use with Wahoo KICKR

KICKR supports 2 types of ANT interfaces: generic ANT+™ FE-C trainer control interface and it's own proprietary ANT protocol. Our software supports either but it should be noted that KICKR's proprietary protocol is somewhat faster and more responsive. When searching for ANT+™ devices KICKR will be listed twice: as generic ANT+™ FE-C trainer and as KICKR see the screenshot below:
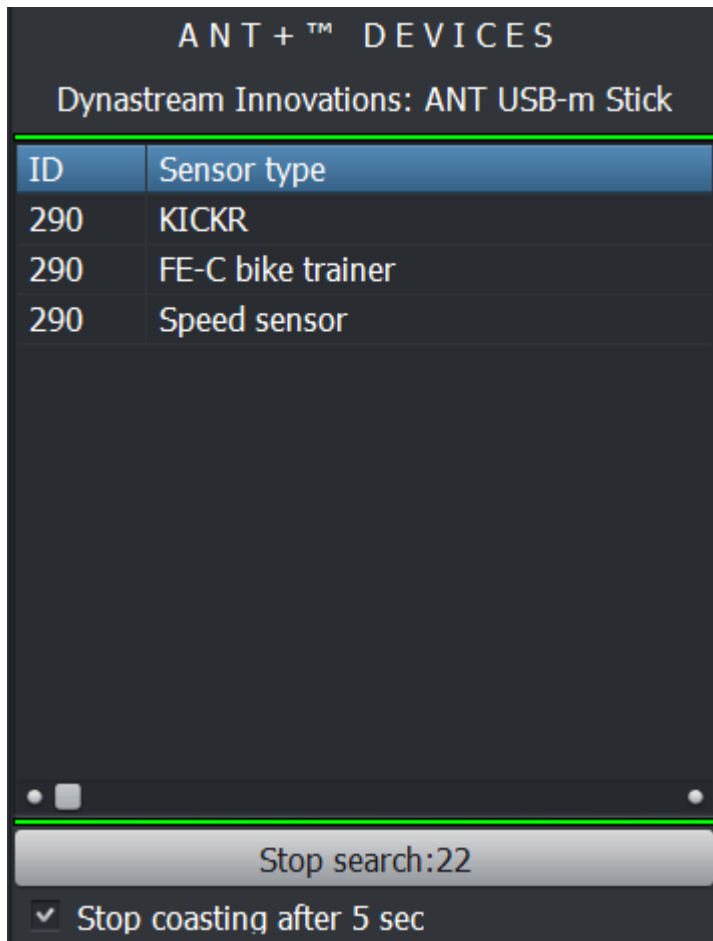
After completing search the software will automatically choose ANT+™ FE-C interface to communicate with KICKR, However ou can click V shaped button located next to ID of the trainer and select KICKR's control interface. When proprietary KICKR control interface is selected the software will show **KICKR** title above device ID :
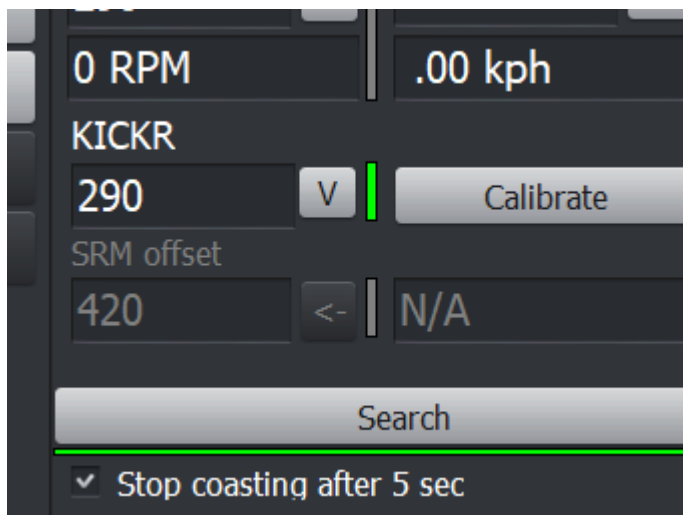
You will also "KICKR" LED lit green in the status area of the screen:

Clicking on "Calibrate: button in "ANT+™ DEVICES" section will invoke KICKR calibration screen where you can perform standard spindown test.
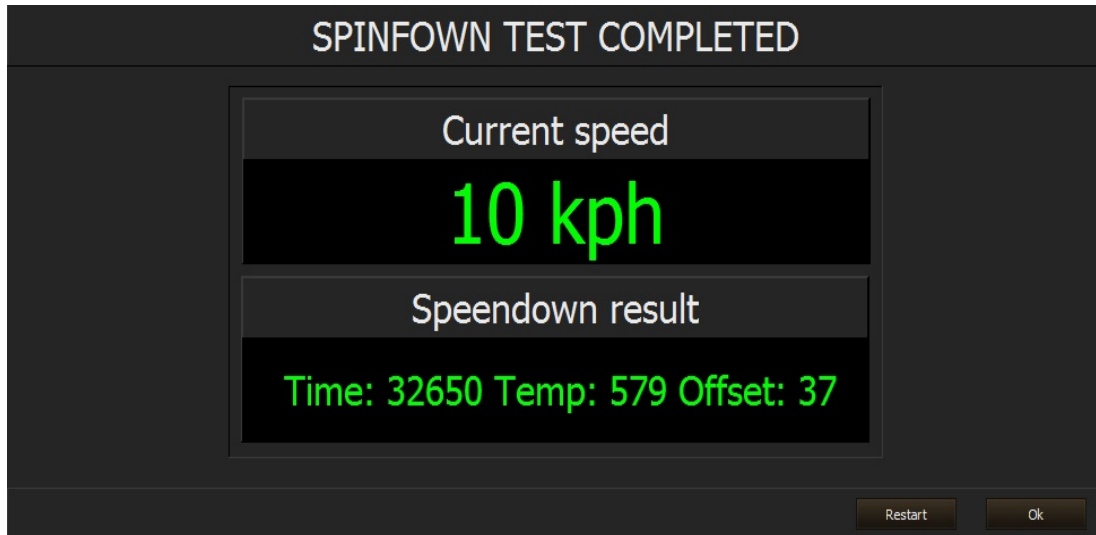
Just follow prompts on top row ("Begin pedaling"/"Stop Pedaling"/"Spindown test completed"). The step between "Stop Pedaling" and "Spindown test completed" takes a fair bit of time so be patient. In the end you will see some internal calibration data shown in bottom part as success indicator.

Note: cadence sensing part of KICKR is a bit flaky so it is highly recommended that you have ANT+™ compatible cadence sensor.

7. 4.   Installing for use with Computrainer

WARNING !!! Before anything you have to make sure that Computrainer has firmware version 43.45 or higher. Otherwise it will not be detected.

In order to use software with Computrainer you have to have Serial to USB interace cable supplied by Racermate and drivers for such cable (normally come as part of Computrainer package) but also can be found on Internet. Once you connected everything accordingly to Computrainer's manual just start the software. Computrainer will be automatically found and recognized. You will see small LED in the bottom part of screen lit green and marked as "Computrainer". That is all about it.

8. Training. Real Road Video

8. 1.   Obtaining Videos - Buying and Subscriptions

If you have purchased a Lynx VR Trainer, you will receive an external USB drive with all videos as a part of the package. If you are using v_ride.x64 software with a different trainer then you will have to buy and download videos from the Veloreality.com online store. It is a good idea to store videos on hard drive with enough free room since videos are very high quality, and fairly large, ranging from 5GB to 15GB in size. All videos will have to be registered and registration is tied to a hard drive where the videos are stored. You can also make backup of your videos on another hard drive. The software will allow up to 2 registrations. If you need more you will have to request limit increase from Veloreality.

Note: All software licenses are tied to the Hard Drive serial number

Alternatively you can **purchase subscription**. In this case all our videos will be available for you. **You will receive links to video files with your order confirmation**. If you subscribed to 720p quality videos those can also be streamed online.

8. 2.   Using online video streaming mode

This will stream videos from the Internet when there is no local files present. It is ON by default. At the moment only free 720p HD quality is available for live streaming. The advantage of such mode is that you have all currently released videos available to play immediately. Well and it is free for now. The disadvantage is that you may experience network stalls and depending on your location the internet connectivity between your computer and video server may not be good enough. You just simply have to try it and see if it works for you.

I**f however you have local files that you've purchased from Veloreality separately or as a part of subscription it will play local copy assuming the directory where the files are stored is selected in software**. If you only want to see local files turn streaming mode off by clicking "**Streaming**" button.
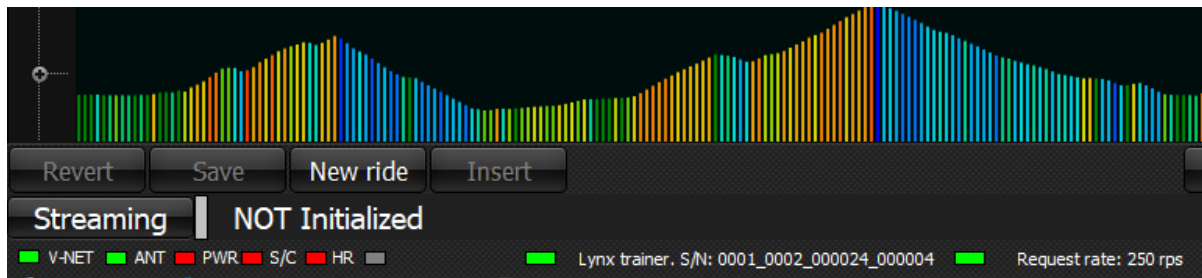
To turn streaming back on click **"Streaming**" button wait for a while and let the system figure it out if the connections are available and the mode can be turned on. If all is fine you will see success status and the video list will refresh:
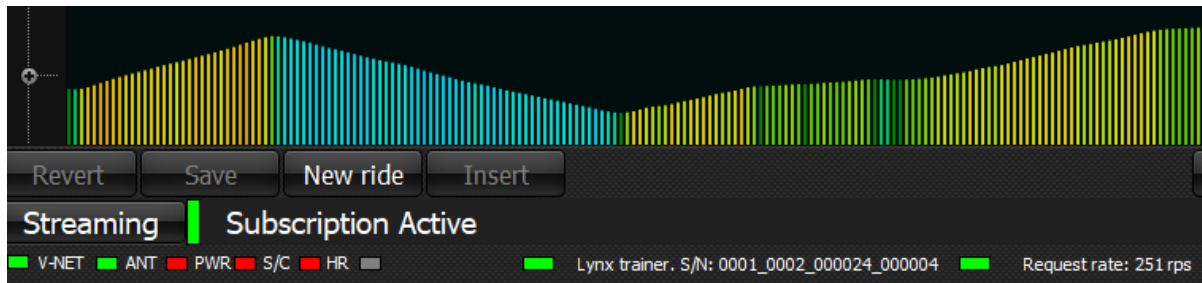
At this point you can click on any of available videos and proceed to riding as described in following sections. To turn streaming off just click Streaming button again.

There is no guaranteed bandwidth and playback of video can stutter. In this case download videos using the links supplied in the email confirming your order.

8. 3.   Selecting your first ride

Click on "Video" button to go to ride selection menu. You will see following screen:
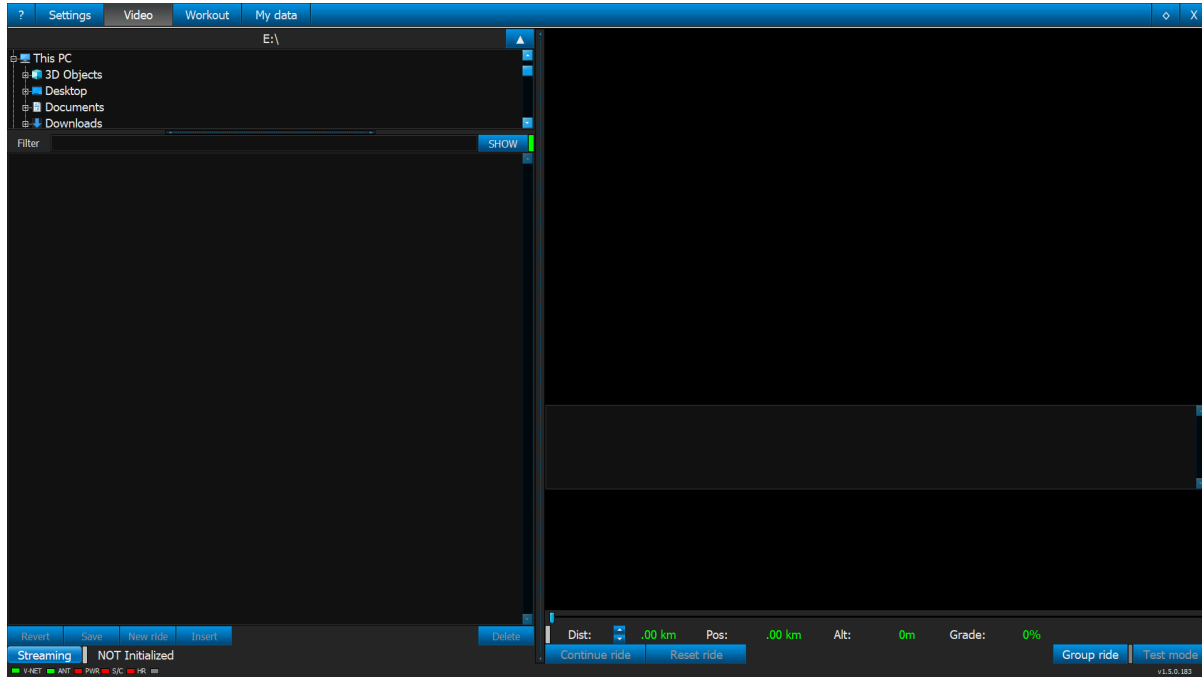
Click button marked with the following symbol to open video folder selection area and select drive and folder where you normally store your videos. Clicking the same button again will close video folder selection area. The system always remembers your last selected video folder. Assuming that you already have some videos and updated video data files (see the beginning of installation section 3) you will see something like this:
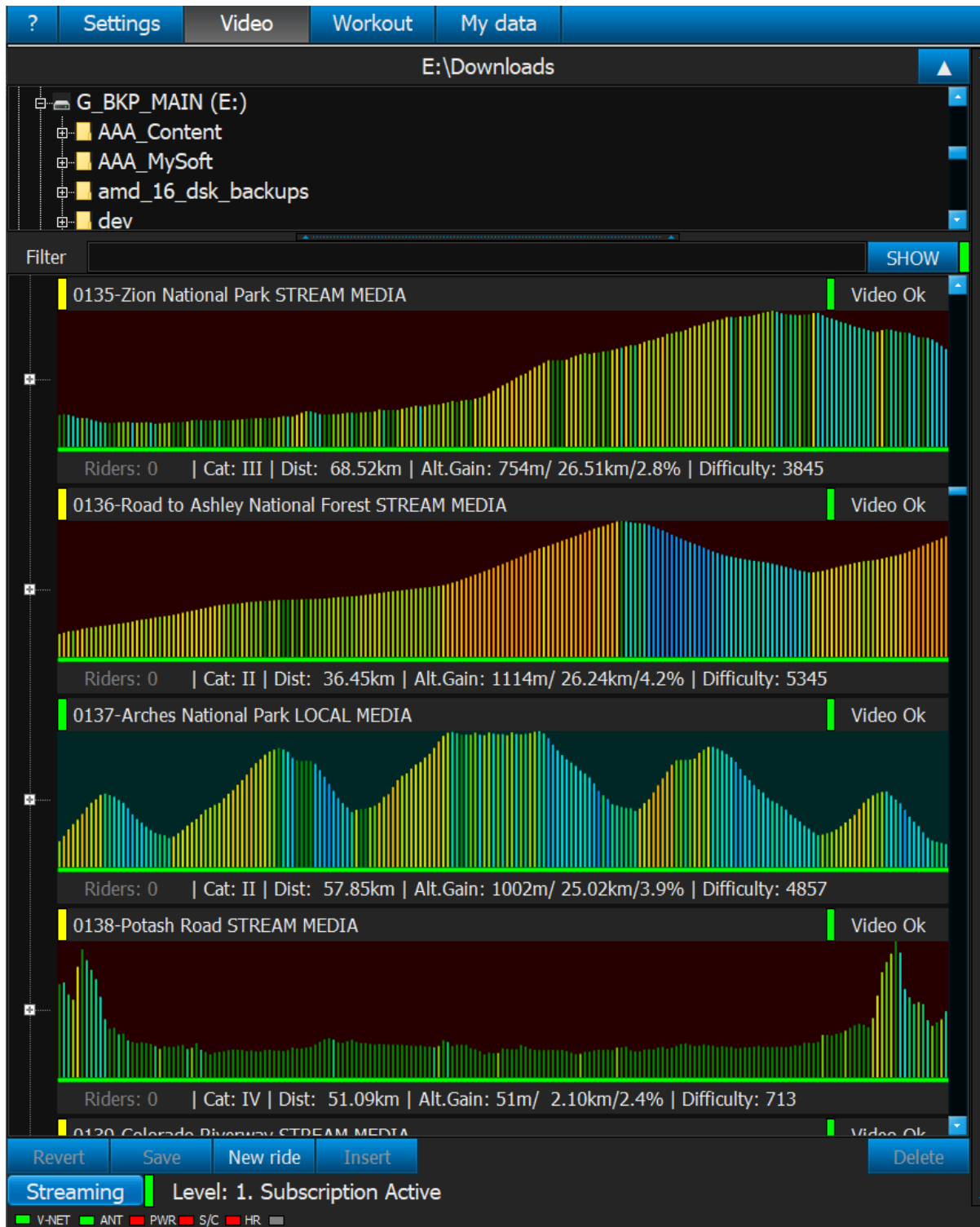
This list shows you all the rides you have in current video folder. If you have not created any rides of your own the system still creates default rides (one per available video). The list also includes multi-video rides created for you by Veloreality assuming that you have corresponding video files in current directory. Once you selected directory that has your videos you may click the same button now marked

by "X" sign to close folder selection area. Software will remember last selected folder and use it next time. Please note that rides are shown in different colors. Dark green are local media that you downloaded previously, dark red are remote files that will stream in 720p only.

The simplest thing to do at this point will be to click on any of the rides and you will then see the first frame of the video in the main area of the screen.
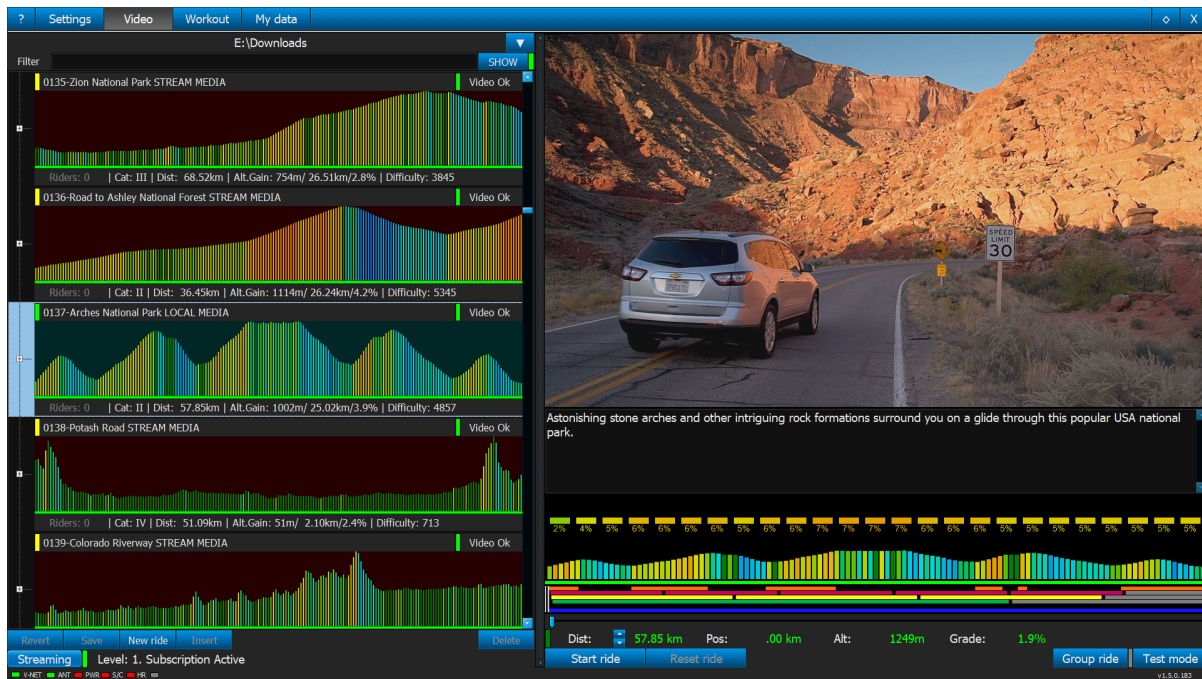
Clicking "Start ride" button will switch to riding mode. However if you did not register this particular video instead of "Start ride" the button will say "Get License". Clicking the button at this stage will bring video registration window.

Fill out the email and password you used to purchase videos in web store and click "Get License" button. The system will connect to online web store and try to get licenses for all videos in current folder.

```
1): g:\RLV\VLR\0001_CA-Appleby_1.1080.avi ... Invalid user email/password ...
2): g:\RLV\VLR\0002_CA-Appleby_2.1080.avi ... Invalid user email/password ...
3): g:\RLV\VLR\0003_ES-Majorca.1080.wmv ... Invalid user email/password ...
4): g:\RLV\VLR\0004_FR-Ventoux_1.1080.wmv ... Invalid user email/password ...
5): g:\RLV\VLR\0005_FR-Ventoux_2.1080.wmv ... Invalid user email/password ...
6): g:\RLV\VLR\0006_FR-Ventoux_3.1080.wmv ... Invalid user email/password ...
7): g:\RLV\VLR\0007_BE-Flanders.1080.wmv ... Invalid user email/password ...
8): g:\RLV\VLR\0008_FR-CapCorse_1.1080.wmv ... Invalid user email/password ...
9): g:\RLV\VLR\0009_FR-CapCorse_2.1080.wmv ... Invalid user email/password ...
10): g:\RLV\VLR\0010_FR-CapCorse_3.1080.wmv ... Invalid user email/password ...
11): g:\RLV\VLR\0011_FR-Vergio-E_1.1080.wmv ... Invalid user email/password ...
12): g:\RLV\VLR\0012_FR-Vergio-E_2.1080.wmv ... Invalid user email/password ...
13): g:\RLV\VLR\0013_BE-WestFlanders_1.1080.wmv ... Invalid user email/password ...
14): g:\RLV\VLR\0014_BE-WestFlanders_2.1080.wmv ... Invalid user email/password ...
15): g:\RLV\VLR\0015_IT-Mortirolo.1080.wmv ... Invalid user email/password ...
16): g:\RLV\VLR\0016_IT-Gavia-S.1080.wmv ... Invalid user email/password ...
17): g:\RLV\VLR\0017_IT-Stelvio-S.1080.wmv ... Invalid user email/password ...
18): g:\RLV\VLR\0018_FR-QueyrasRoute_1.1080.wmv ... Invalid user email/password ...
19): g:\RLV\VLR\0019_FR-QueyrasRoute_2.1080.wmv ... Invalid user email/password ...
20): g:\RLV\VLR\0020_FR-Marmotte_1.1080.wmv ... Invalid user email/password ...
21): g:\RLV\VLR\0021_FR-Marmotte_2.1080.wmv ... Invalid user email/password ...
22): g:\RLV\VLR\0022_FR-Marmotte_3.1080.wmv ... Invalid user email/password ...
23): g:\RLV\VLR\0023_FR-Marmotte_4.1080.wmv ... Invalid user email/password ...
24): g:\RLV\VLR\0024_FR-Tourmalet-East.1080.wmv ... Invalid user email/password ...
25): g:\RLV\VLR\0025_Lago-dIseo.1080.wmv ... Invalid user email/password ...
26): g:\RLV\VLR\0026_FR-GasconyTour_1.1080.wmv ... Invalid user email/password ...
27): g:\RLV\VLR\0027_FR-GasconyTour_2.1080.wmv ... Invalid user email/password ...
28): g:\RLV\VLR\0028_FR-GasconyTour_3.1080.wmv ... Invalid user email/password ...
29): g:\RLV\VLR\0029_FR-GasconyTour_4.1080.wmv ... Invalid user email/password ...
30): g:\RLV\VLR\0030_FR-Turini.1080.wmv ... Invalid user email/password ...
31): g:\RLV\VLR\0031_FR-Madone.1080.wmv ... Invalid user email/password ...
32): g:\RLV\VLR\D001_Demo.1080.wmv ... Invalid user email/password ...
33): g:\RLV\VLR\D002_Demo.1080.wmv ... Invalid user email/password ...
34): g:\RLV\VLR\D004_Luxembourg-Demo.1080.wmv ... Invalid user email/password ...
35): g:\RLV\VLR\D004_Luxembourg-Demo.1080.wmv ... Invalid user email/password ...
```

Email   Password

xxx@xxx.com   ******   Get license   Cancel

When you are online (connected to V-RIDE Network) you can see how many live riders are riding on particular video. For example screen below shows that Ride D001_Demo has 10 active riders. If you click on that ride along with the first frame of video you will seeg 2 rows reen dots each representing single live rider. Upper row displays nearest 1000 meters and bottom row displays all video. If any of riders is in front of your current position (selectable by the slider) you will see live riders avatar that shows simplified representation of cyclist and his Nickname. Avatars can be enabled/disabled by clickin "Avatars" button. When LED beside this button is gray avatar display is disabled. When Blue it is enabled. Online features only available on so called "Automatic rides" – the rides that represent single video and not created by yourself out of pieces of various videos. At least this is how it works for now.
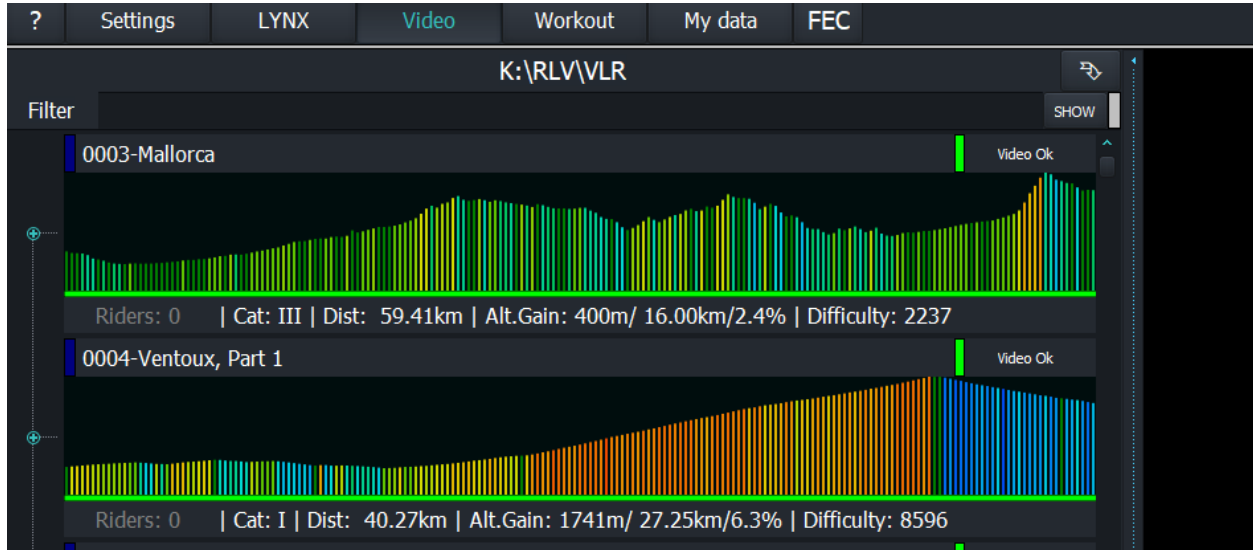
When the ride is selected you can adjust starting point of the ride using slider at the bottom of the screen:
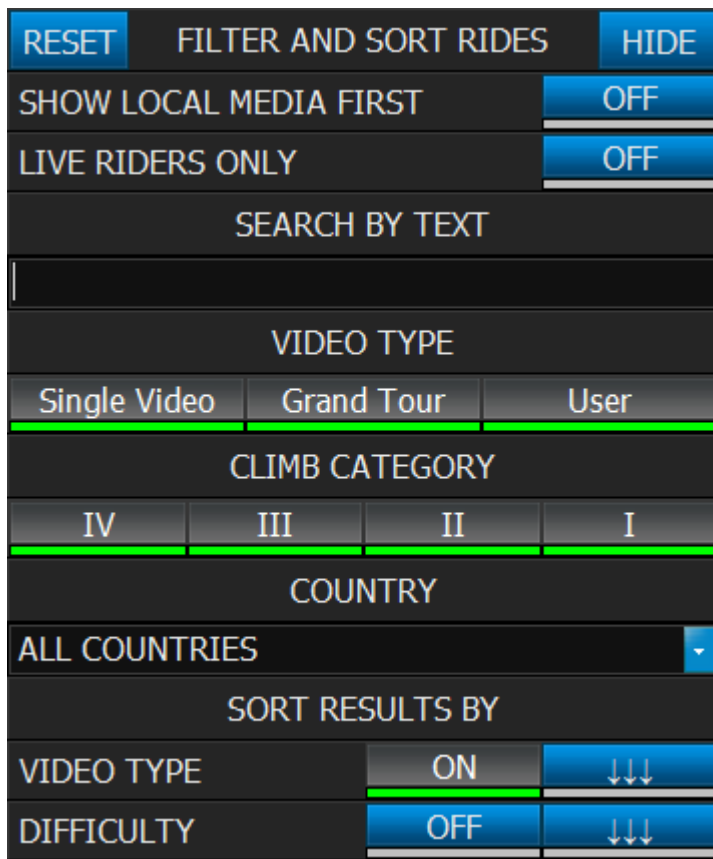
8. 4.   Sorting and Filtering rides

List of the rides can be quite long. The software offers way to filter and sort rides. There is a line called Filter on top of ride list:

Clicking on "SHOW" button will bring up ride sorting/filtering options:

Clicking "RESET" will reset all fintering/riding options to default values.

Clicking "HIDE" button will hide search/filter options from the display

Clicking "SHOW LOCAL MEDIA FIRST" button will limit rides to only those that have active riders riding this ride.

Clicking "LIVE RIDERS ONLY" button will limit rides to only those that have active riders riding this ride.

Typing any text in "SEARCH BY TEXT" box will limit ride list to only those containing typed text in their name/file name/description

Selecting any value other then "ALL COUNTRIES" from a "COUNTRY" options will limit rides belonging to a selected country only

Clicking on "VIDEO TYPE" buttons will turn ON/OFF display of rides that are:

- Single videos: well just a single video only

- Grand Tour: these are made from few videos that were originally filmed as asingle long ride and then split into multiple videos. If you have all of the videos belonging to particular grand tour then the softare will automatically recreate single long ride out of those

- User: these are rides created by users by combining arbitrary pieces of various videos together.

Clicking on "CLIMB CATEGORY" switches will include/exclude rides belonging to corresponding category where "IV" stands for easy, "III" is moderate, "II" is hard and "I" is extremely hard.

In the "SORT RESULTS" section clicking "VIDEO TYPE" and "DIFFICULTY" will sort rides by corresponding parameters. Sorting is done first by "VIDEO TYPE" and then by"DIFFICULTY". Clicking on arrow buttons will toggle sort order to ascending/descending

Sorting/Filtering state is automatically preserved by default. It can however be toggled off/on though in "Settings/User Data" page using "Rides Filter/Sort" option.

8. 5.   Creating your own rides

This feature allows creation of custom rides out of arbitrary segments of available videos.

Click "New ride" button at the bottom of the ride selection part of the screen. You will then be prompted to select video:
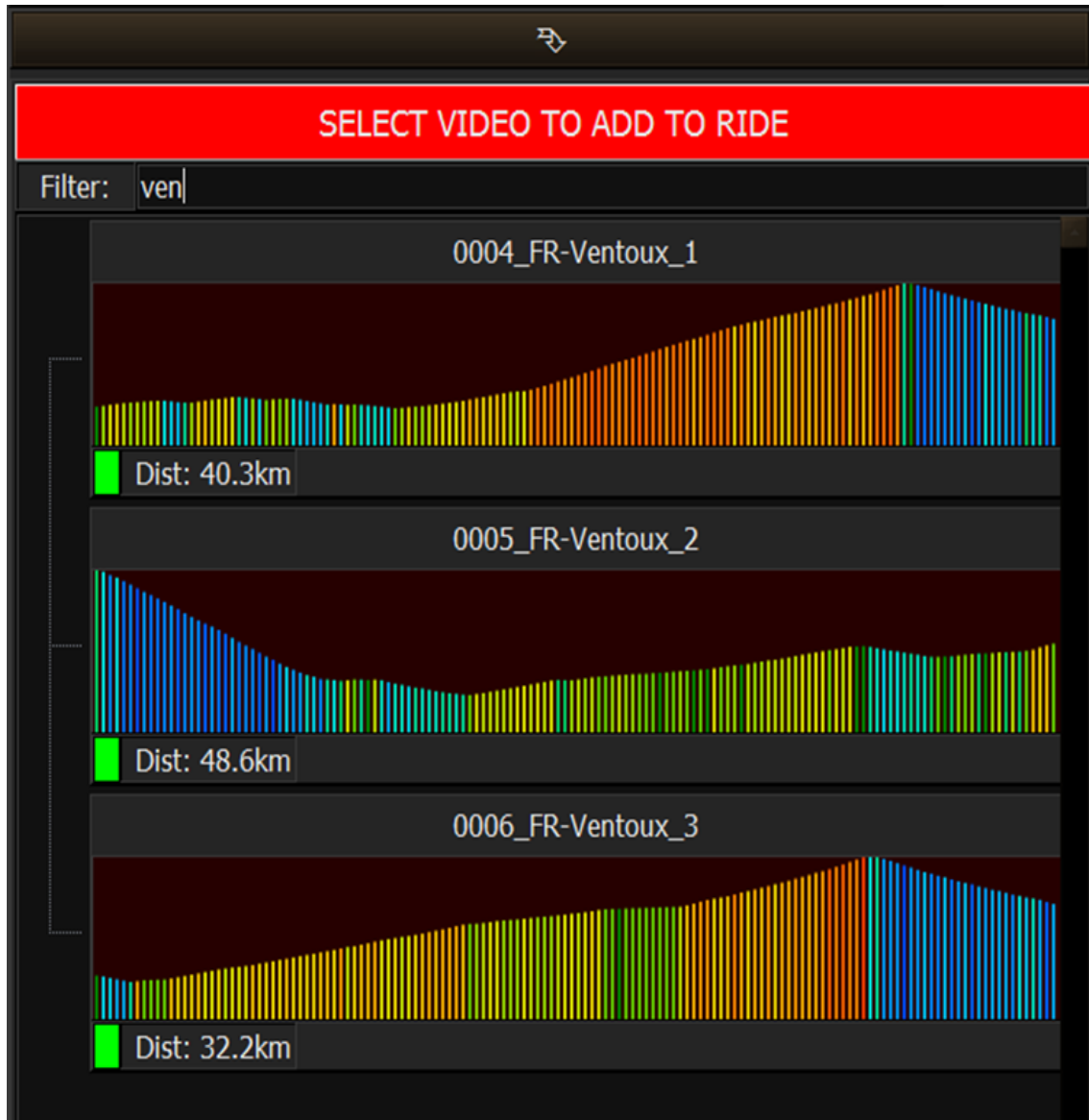
Click on the video you want to add to your ride and click "Ok". At this point you will see newly created ride in the list with the first video added to it. Entering some texe in the filter area will limit your choice to the videos that have corresponding text as the part of their name:
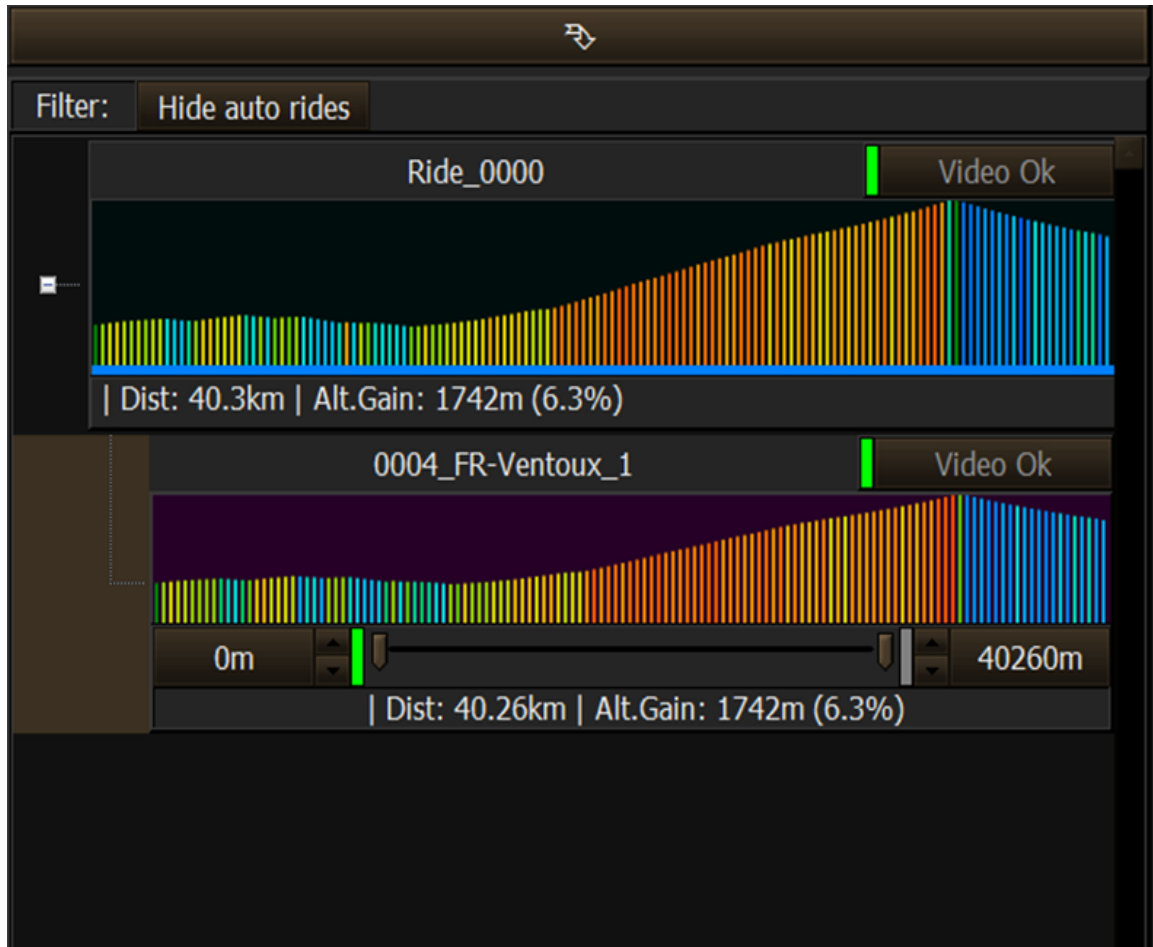
Lets add couple of more videos:
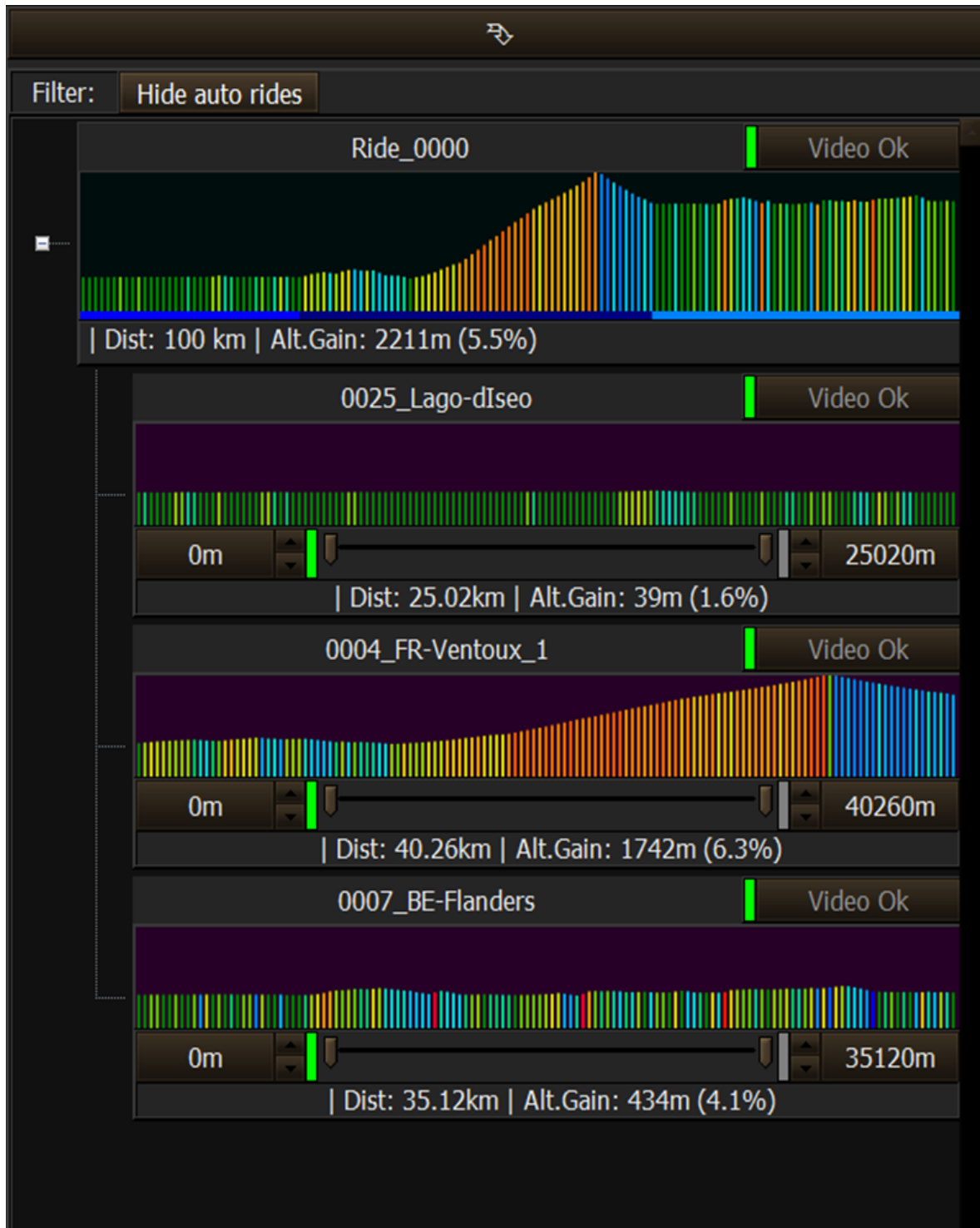
Now we have 3 videos joined. Each video has sliders that allow to select particular part of the video. Let's adjust the sliders:

What we have here now is flat scenic part for warm up, then main climb and then nice downhill for cool down. When adjusting sliders all information on the screen updates immediately. Also as you move sliders video area of the screen tracks your video accordingly to the position of the slider. For more precise adjustment of position you can use small up/down buttons in the video tracking area. Small LEDs at the side of the buttons are lit to show you what slider is being moved. This is important when looking at the video frames. Also clicking on numbers corresponding to left/right part of selected segment will

immediately synch video fram to the beginning/end of segment being edited. To enter name for you ride click on the ride and then click "Edit" button
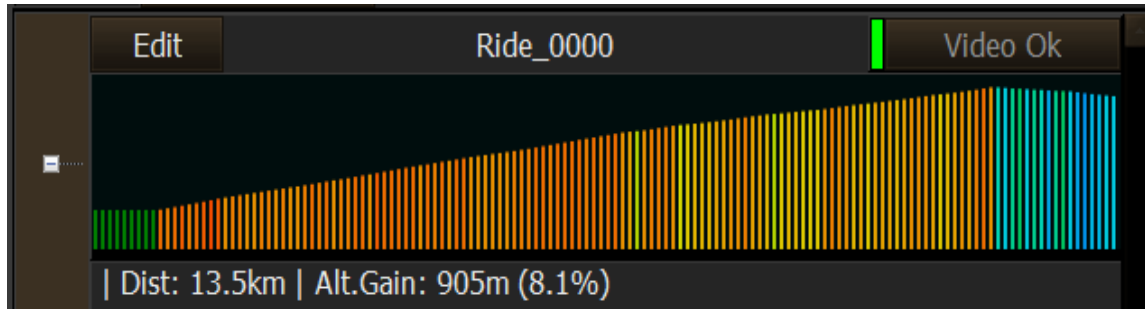
And then enter the name:
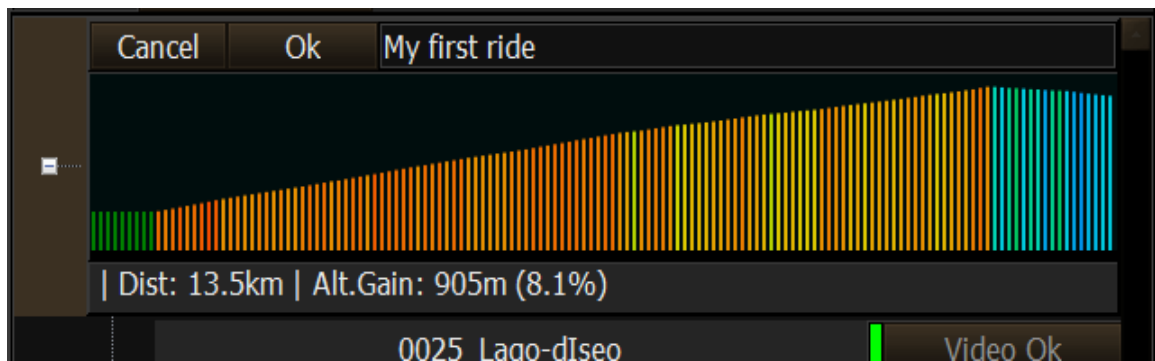
After you've done you work you can click "Save" button to save your work or "Revert" to cancel all edits. "New ride"/"Add video" is a single button at the bottom of the screen with the dual role. When the whole ride is selected the button has caption "New ride" and adds new ride. When the video inside the right is selected the button has caption "Add video" and adds video to already existing ride. "Insert" button will insert video before the one currently selected. Clicking "Delete" button vill delete currently selected item be it whole ride or particular video inside the ride.

Notice that you can not edit rides created automatically and/or supplied by Veloreality. You can easily distinguish your own rides from rides by Veloreality by color mark to the left of ride name. Custom rides marked by green color and rides vfom veloreality by dark blue.
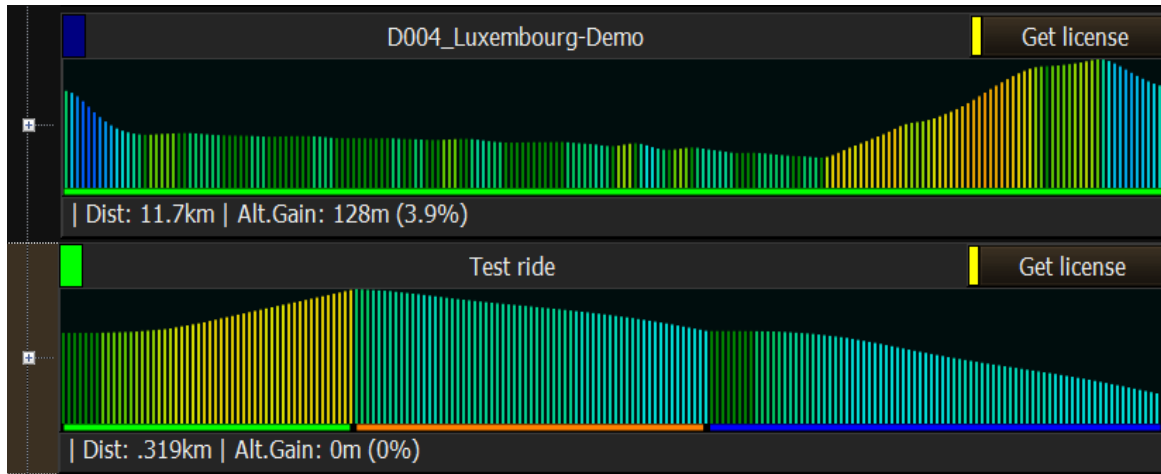
The area underneath video frame allows you to select starting point of currently selected ride:

It shows you currently selected part of the ride and 2 profiles. One is full profile of ride and the one on top is the view of the grades in the next 1000 meters. If you rode the part of the ride "Recall" button allows to restore last position of your ride so if your current ride is very long you can ride it in few days. Also the ride never really ends. When you reach the end of the ride it automatically starts from the beginning/

8. 6.   *Riding*

When you are ready to ride click "Start ride" button. You will see following display:

This is so called paused state and you see control buttons. If you mount your trainer and start pedaling all Gui controls disappear and video goes full screen:

If you stop pedaling after few seconds the display goes back to paused state. Pressing numerical keys 1,2,3,4 during riding select different data displays. Pressing key 0 leaves video only.

8. 7.   *Ride recovery*

During ride software automatically saves complete running state for each ride. If for whatever reason the software crashes/locks up just restart the software, select the ride you were riding and the state will be completely restored. Also when you stop your ride and come back to it later the state will still be restored. In this state the slider that lets you select starting position of the ride is disabled. If you want to continue riding then just click "Continue ride". If however you want to ignore restored state and start ride from anew then click "Clear ride" button. All your data will be reset to zero and the slider that lets you select starting position of the ride will be enabled. Before resetting data your ride will be automatically saved.
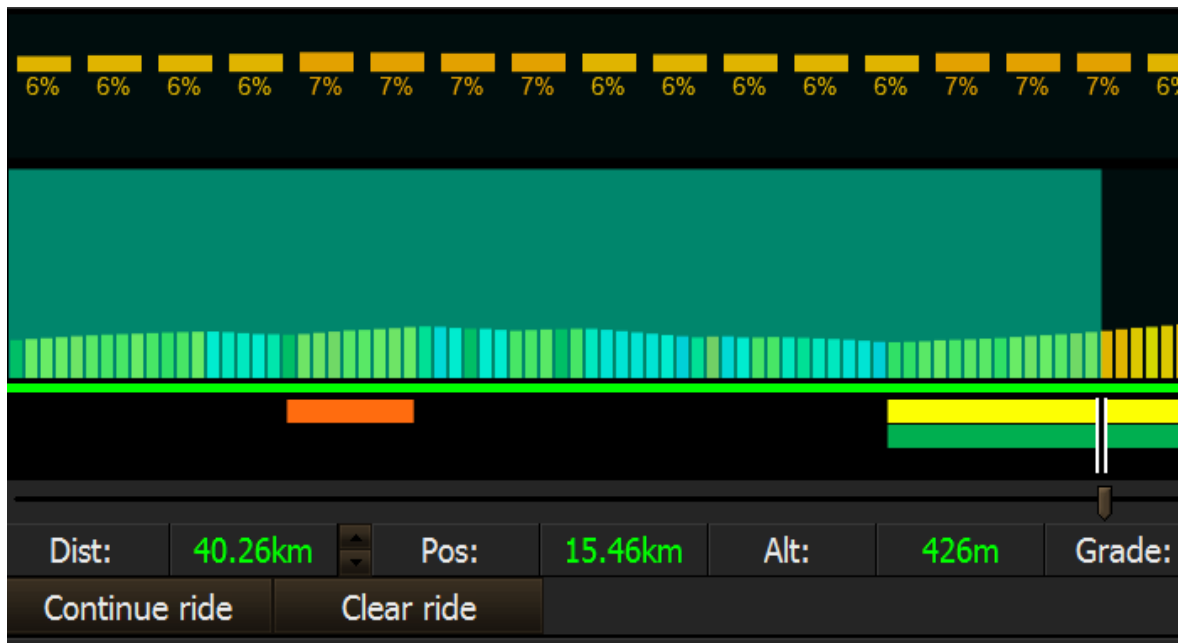
8. 8. *Segments and live riding*

Each video has multiple associated segments that can overlap. You can see segments represented visually during selection of ride:
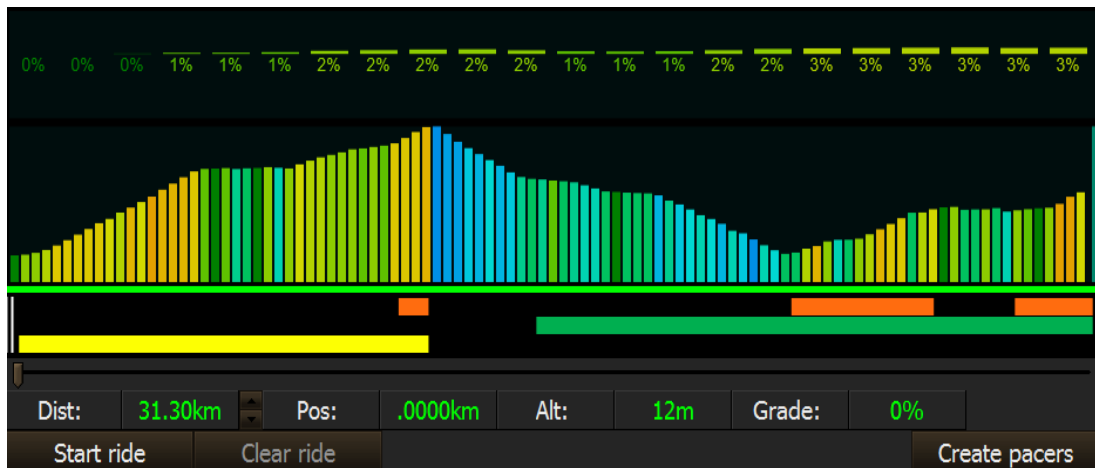
Each segment is depicted as horizontal colored bar.

When you ride your performance against each segment will be recorded. The software keeps up to 5 performances per user per segment. When the new performance is being submitted and there are already 5 performances available one performance must be purged. If the new performance is better than the slowest one it will be inserted into appropriate slot and the slowest performance will be

purged. If however new performance is slower than any other in the bucket then what will be purged depends on the value of "Segment performance strategy" setting. If it is set to "Purge best" then the fastest performance is purged. If it is set to "Purge worst" then the slowest performance is purged. If you select a ride where there are some performances already available you would be able to race against it.

During the ride when you reach the beginning of any segment the software will launch virtual pacers that represent your previous performances on the segment. Here is how it looks during the ride:
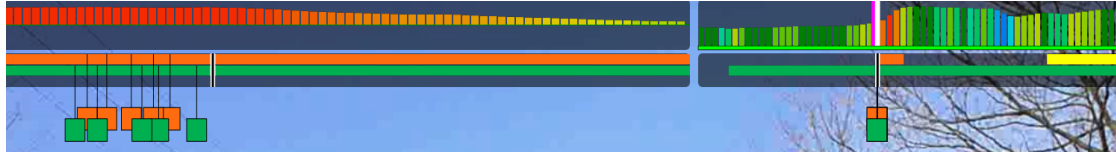
Right side shows view of complete ride with profile segments and virtual pacers. Your current position represented as black and white marker on profile. Colors of virtual pacers correspond to the color of current segment.

Left side shows next 200m of profile. The part showing pacers and segments has your current position in the middle (black and white marker). The segment is zoomed to show previous 100m and next 100m relatively to your current position so you can clearly see nearest pacers and the dynamics (whether you're gaining or loosing).

When pacer's speed is the same as your speed the pacer is represented by square, if your speed is higher than that of pacer it represented by triangle facing you. If your peed is lower then the triangle if facing away from you.

Very bottom row of that display shows actual live competitors if you are online.

8. 9.   Avatars

Those are shapes layered on top over the video and represent your competitors. Avatars representing your previous performances are displayed as flat circles. Avatars representing live competitors are displayed as flat circles with poles and Nickname/number on top. Number is shown when Nickname corresponding to particular rider did not yet have tome to propagate over the network. By default the avatars are enabled but their visibility can be configured (see section 9. Real time displays of this document).

Below is the screenshot showing racing your previous performances and live racers in action:

Maximum number of avatars showing at the same time is currently set to 10 in order not to clutter display. Also avatars spaced less than 10 cm apart distance wise will be culled so only one of those will be visible.

8. 10.   *Group riding (Power normalization)*

Riders can be of vastly different fitness levels. What looks like easy comfy pace for one could be a total killer to the other. This present challenges when group of riders want to ride together/compete over the Internet on a level field. Software has special "Group ride" mode for that.
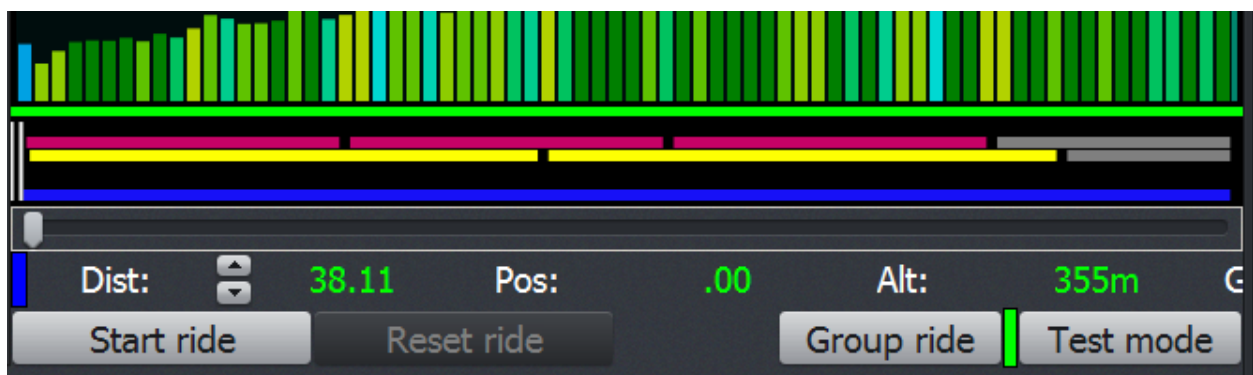
Clicking "Group ride" button toggles this mode. When it is on the LED to the right of this button has green color. Otherwise it is gray. When the "Group ride" mode is on your speed will be calculated based on your power scaled to the ratio of 200 / YOUR FTP. FTP is so called Functional Threshold Power (maximum average power you can maintain for 1 hr). So basically riders with FTP below 200 watts will

be given a power boost while riders with FTP higher then 200 watts will be throttled down. The boost/throttling down factor will be determined by following formula:

POWER_TO_CALCULATE_YOUR_SPEED = YOUR_ACTUAL_POWER (200/FTP)

So please enter you realistic FTP in "Settings/User data" if you want to participate in riding/competing over the Internet on a level playing field. Note that the real time display will still show the actual power you are riding at. Only speed/distance traveled will be affected by "Group ride" mode.

Also when your FTP is more then 1% different from 200W total weight of cyclist and bike used for speed calculations will be 80kg

8. 11.   *Saving your ride data and exporting it to other applications*

Each time you stop your RLV ride by either leaving ride screen or just closing the program you current ride is automatically saved so you can always continue from where you have left off. The ride is saved in proprietary format and has a name made from time stamp of its first data point. For example if you started ride at Jan 1, 2015 11:23:01 AM your ride will have following name: 2015_01_01_11_23_01_R01.ride. Ride saved in this format is intended for internal use and for future updates like ride analyzer etc. Notice: the ride will not be saved if it contains less than 10 data points. Also keep in mind that before creating file name from time stamp the time is converted from your local time to UTC time.

Each time the ride is saved in native format it is also exported in TCX format. TCX format is recognized and can be used by virtually any 3rd party application in existence. However ride in native format can't always be represented by single TCX file. Reason is that the ride can be built of an arbitrary number of parts of an arbitrary number of videos. In such cases each video part is exported as a separate TCX file. Name of each exported TCX file again is made from time stamp of its first data point. Even if the ride is a single video if you rode past the end of the video the ride will be split at the end of the video.

Notice about ride splitting on multi part rides:

First some definitions:

1) In VRide software the single item you can ride is called RIDE .
2) Ride is a collection of arbitrary segments of videos stitched together by software.
3) Some rides are created by default and correspond to a single videos.
4) Some rides are created by default and marked as Grand Tours. They consists of few videos stitched together where the end of one video and the beginning of the next are coincident so that the whole thing can be ridden as it was a single seamless video.
5) Users can also create their own rides.

When you rode the ride it will be automatically exported into one or more TCX files as per following rules:

1) If you rode past the end of the ride and it rolled over the ride will be split as many times as the roll over count.

2) Some rides such as The Paterberg Loop are exempt from rule (1) as they're actual loops where beginning and the end of the video are geographically the same. So those will not be split.

3) When the ride spans multiple videos it will be split (one TCX per video)

4) Grand Tours are exempt from rule 3.

5) If you stopped in the middle of the ride and the pause lasted more the 30 minutes ride will be split at this point..

All your data files (rides in native format, exported TCX files etc.) are located in your user directory. Since this is portable program the user directory is located in "**data\users\your_numeric_id"** subfolder relative to the folder where you put your main executable file. We will further refer to this folder as a "**user root**". Native rides are placed into "**user root\rides**" folder and exported TCX files are placed into "**user root\rides_export"** folder. To quickly open a folder containing TCX files click 'My data' button.

8. 12.   Exporting video rides as workouts

If you created your custom ride as containing multiple parts some time it is desirable to export it just as workout (No GPS positional information). In this case the resulting ride file will not be split into multiple TCX files and can be imported to various online services as a single workout.

In order to do that mark your custom multi part ride as having no GPS data as in picture below:
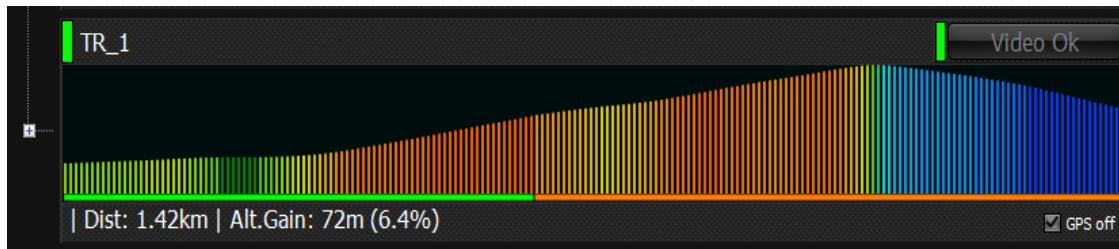
Keep in mind that "GPS off" check box is only available for your own custom rides.

9. Real time displays

When in riding mode you can select different real time data displays by using numerical keys 1,2,3,4 and 0 either on your keyboard or PC remote control. Real time display currently has few elements/zones whose style can be changed and / or turned off. Main elements/zones are:

Numerical display – responsible for showing numerical values such as Speed,Power,Cadence etc. etc

Profile display – graphically displays road profiles with color coded road grades

Segment display – graphically displays predefined segments over which all your performances are automatically recorded. Also displays liver representation of your previous performances and live racers.

Racer name display. Displays nicknames of the racers.

Below is the screenshot showing major elements/zones of real time display:
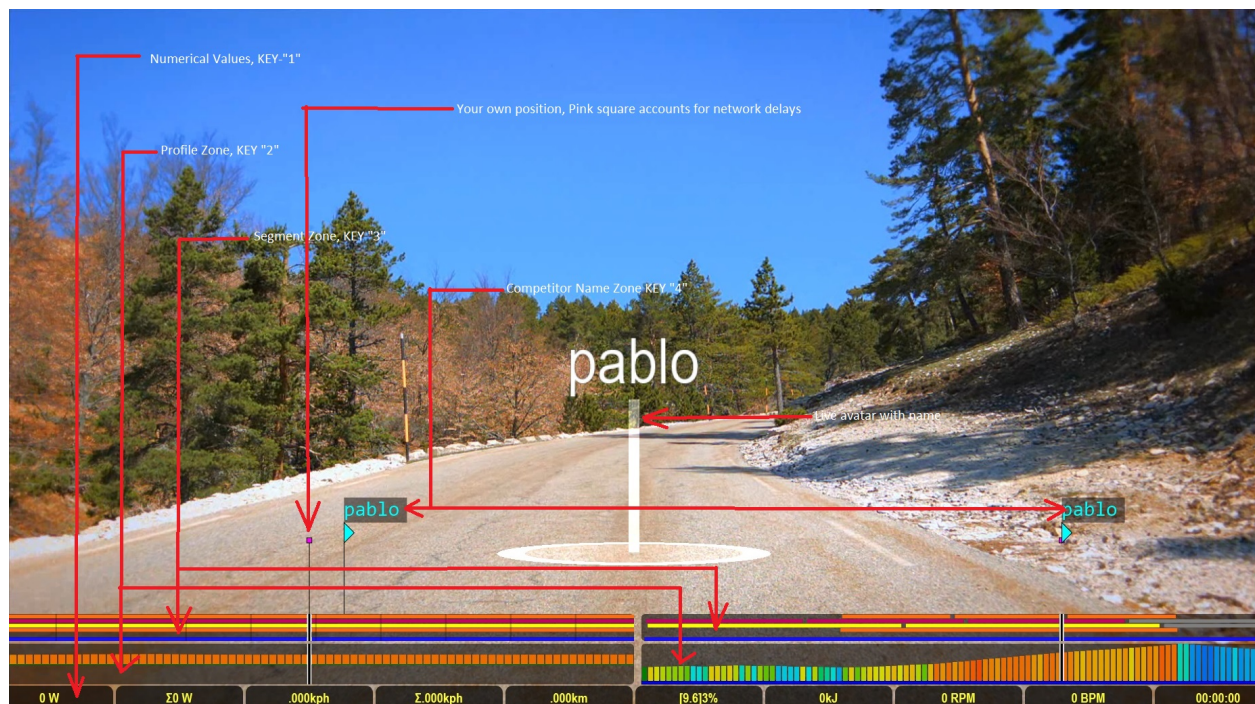
9. 1.   Dashboard display – key "1"

This key control display of numerical values (Speed, Power, Time, etc. etc). Repeatedly pressing key "1" switches between car dashboard like view and numerical boxes view as in following 2 pictures:

9. 2. *Dashboard display scale "left arrow"/"right arrow"*

Pressing **Right Arrow** key on keyboard will increase size of main data area and corresponding fonts. Pressing **Left Arrow** key will decrease the size of main data area and corresponding fonts. The scale limits are from 1.0 to 3.0 with 0.1 step. The default value for scale is 1.0.
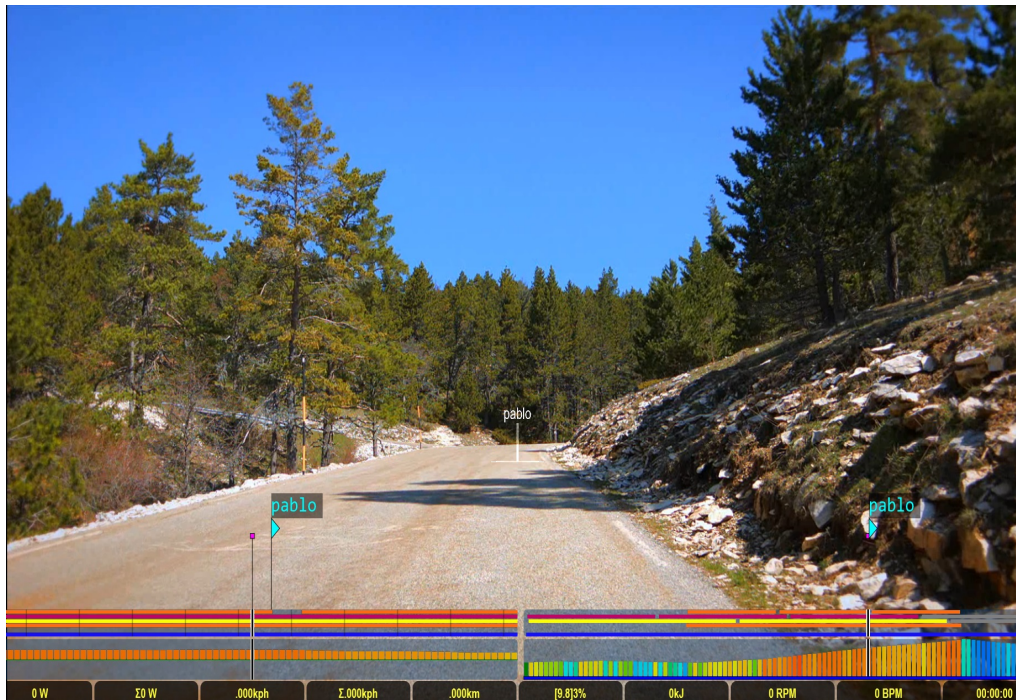
9. 3.   *Profile display – key "2"*

Repeatedly pressing key-"2" switches between following state of profile display:

Dual Profile Display with short profile length of 100 meters each way and full profile.
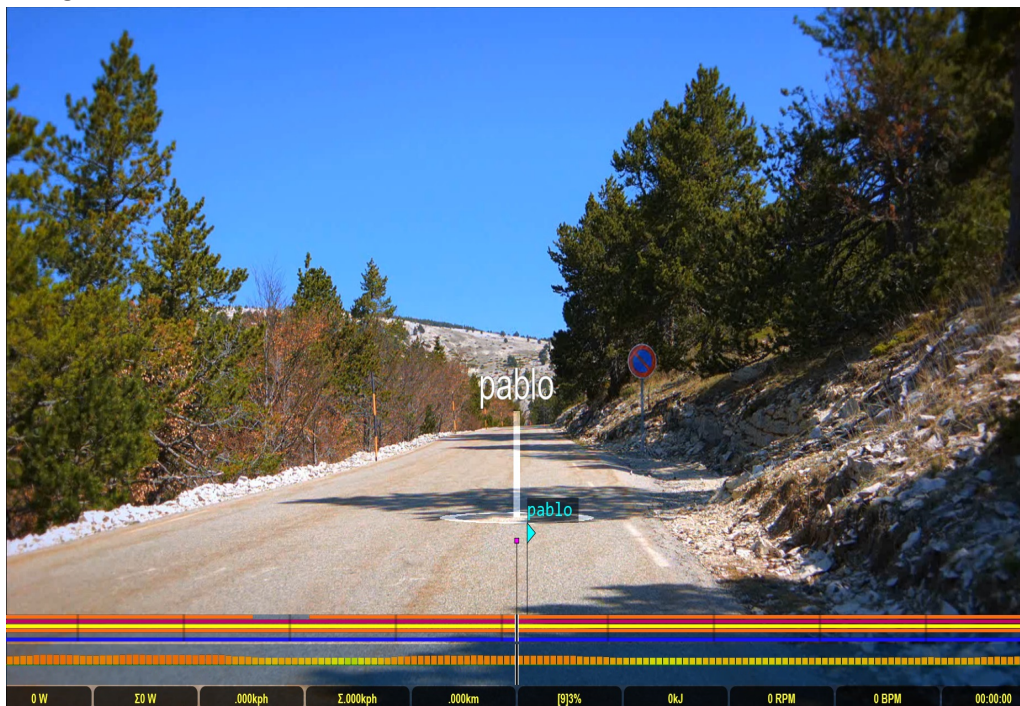

Dual Profile Display with short profile length of 1000 meters each way and full profile. When in this state the profile background has bluish tint.
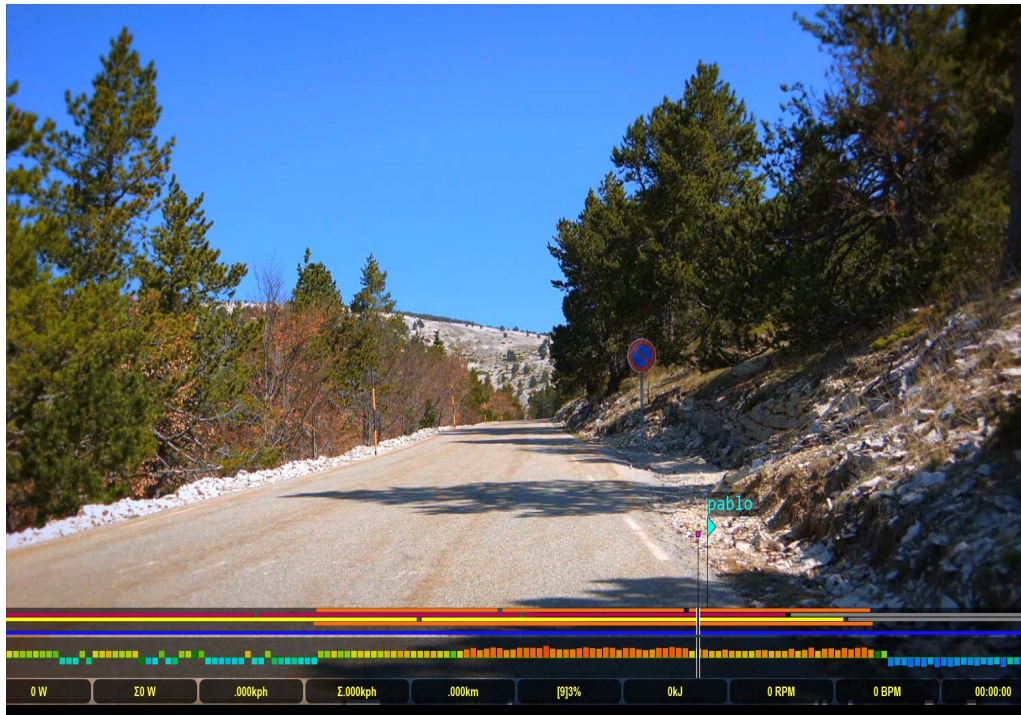
Single Profile Display with short profile length of 100 meters each way.

Single Profile Display with short profile length of 1000 meters each way. When in this state the profile background has bluish tint.

Single Profile Display showing full profile.

No profile. In this state display of segment zone along with your previous performances, live racers and their names is disabled.
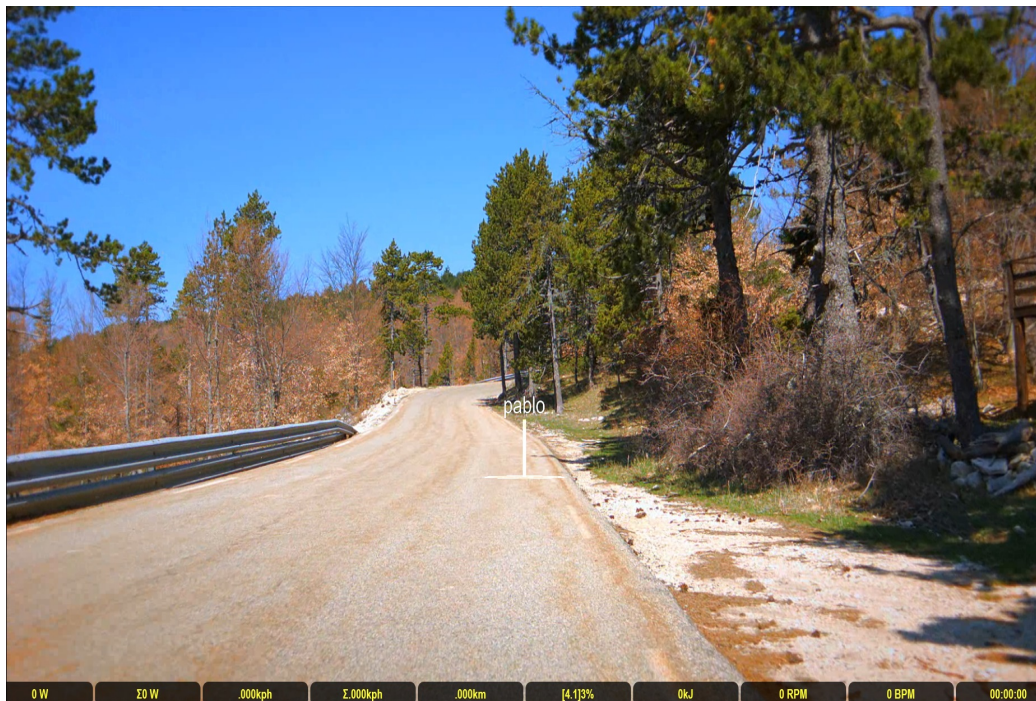
9. 4.   Segment Display – key "3"

This controls display of segments, your previous performances and your live competitors. Repeatedly pressing key "3" switches display between following sates: **OFF** - display is off, **ON** - Display is on and competitors/pacers signs are grouped by level vertically, **ON-LEVEL** - Display is on and competitors/pacers signs are placed on the same level vertically

9. 5.   Competitor Names display – key "4"

Repeatedly pressing key-4 turns on/off display of competitors name.
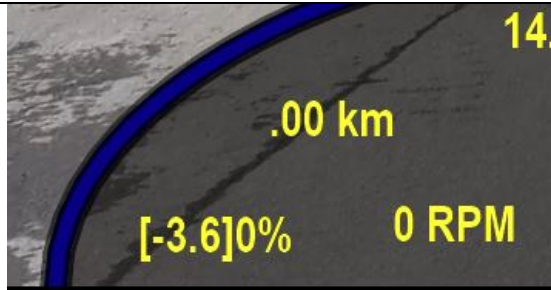
9. 6.   Video only display – key "0"

Repeatedly pressing key-0 switches between last display and display with only video visible.

9. 7.   Avatar display key "A"

Pressing key "A" during ride toggles display of avatars (live riders and your previous performances).

## *9. 8.   Text color on real time displays (odometer/boxes)*

Normally all text values (Cadence, Distance, Speed, Road Gradient etc. etc.) are displayed in green color. When grade reduction kicks in (see Target not found!) the color changes to yellow. Finally when the system san not maintain video frame rate high enough to keep up with the calculated cycling speeds (for example filming vehicle had to slow down on switchbacks/steep descends) the software will turn on virtual brake thereby reducing calculated speed of a bicycle. This situation indicated by text labels having pinkish color.

|	
NORMAL RIDING	
GRADE REDUCTION	
VIRTUAL BRAKE IS ON	

10. Structural Training - Workout

10. 1. Creating and editing workouts

Selecting the "workout" button will display the following screen.
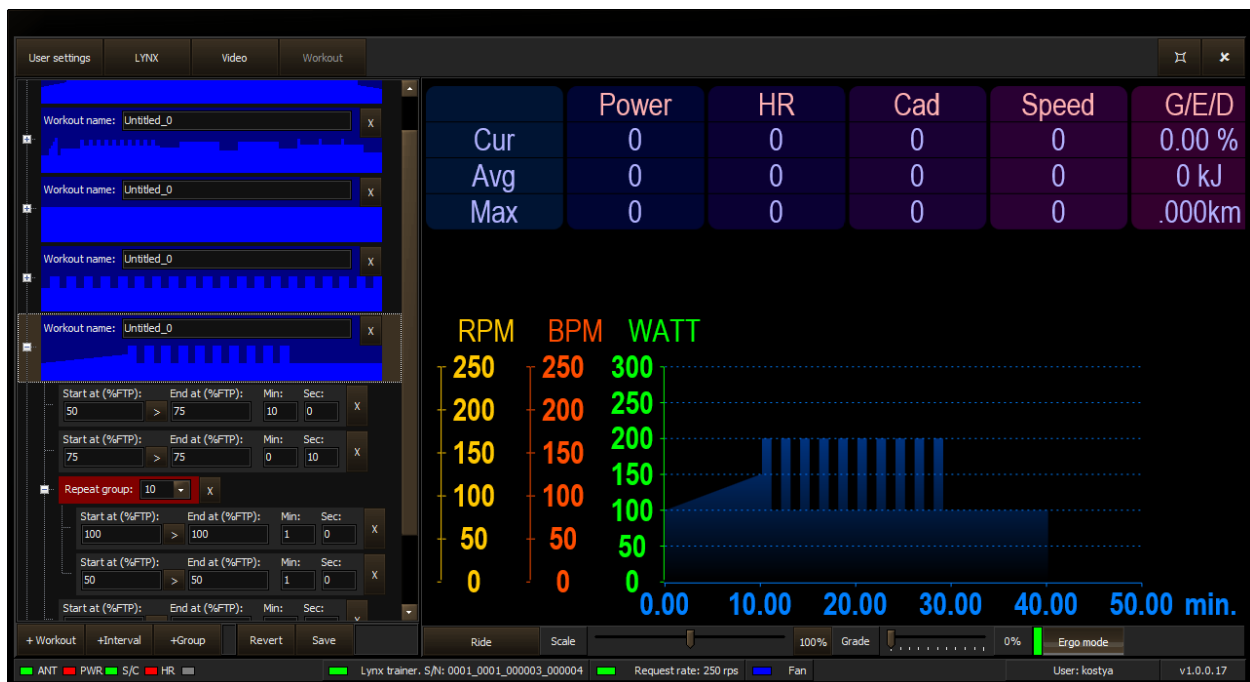

On the left side you will see a list of workouts. Originally the list is empty. You have to create workouts yourself. To the right there is a graphical representation of currently selected workout. The bottom bar has the following:

+Workout lets you make a new workout or interval session. Simply give the workout a name & fill it with either individual intervals or groups of repeated intervals by selecting either of the buttons noted below. To delete click the cross shape to the right of the name.
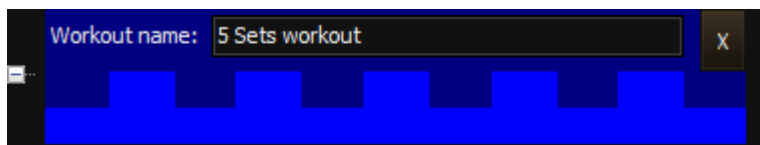

+Interval lets you create a individual interval inside your new or selected workout. You can enter the % ftp you want to start & end the interval in the two boxes. To the right of that you can enter the interval duration. The interval is added after the one currently selected

>|<Interval same as +Interval but inserts the interval before the currenly selected one instead of after it.
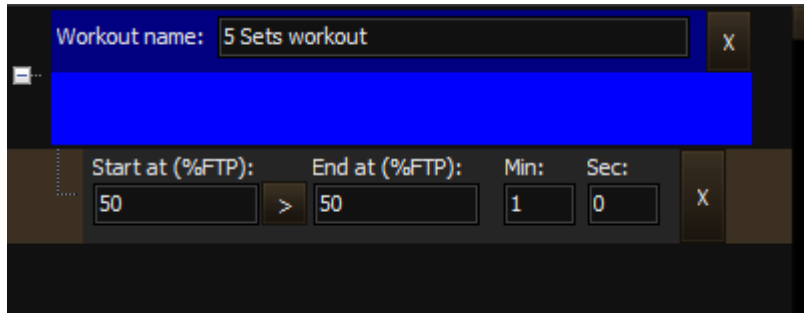
+Group this groups the following intervals so you do not need to repeat the same entry over and over. With this selected you can build quite a complex training session in a short time. The group is added after the one currently selected.

>|<Group same as +Group but inserts the group before the currenly selected one instead of after it.
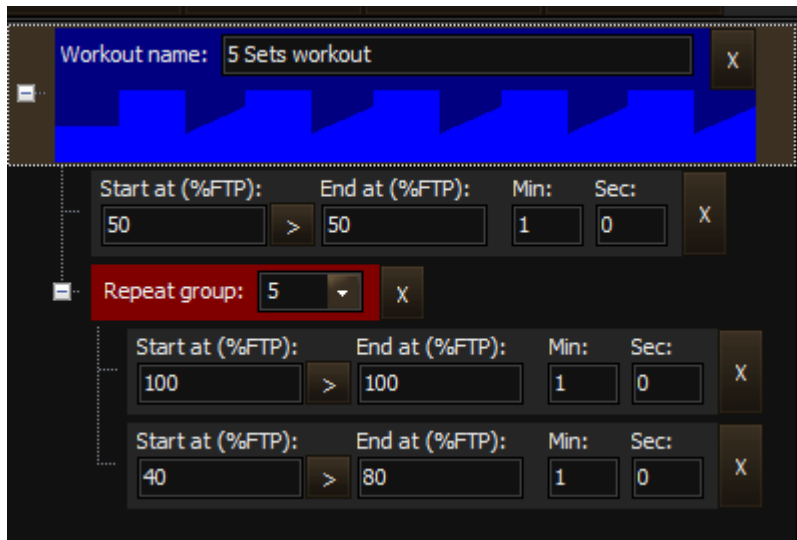
Revert lets you jump back to the the state of your last save

Save after you have made your workout remember to save it!

10. 2.   Riding workouts

Ride takes you to the full screen version of the screen to the right, it also triggers the recording and display of your data in real time. The aim for you if your not on the Lynx VR Trainer or selected trainer is to use the red pacing bar to guide you towards holding the desired watts. It will shrink and turn green as you close in on the correct power. If you are on a Lynx VR Trainer have selected ergo mode then it is not necessary to focus on the bar as the trainer will be automatically adjusting resistance to keep you at specified power level.

Scale with this you can easily adjust the entire workout up or down as a % of the original. This means you can quickly select an interval type & simply move the scale slider in the place of adjusting each interval.
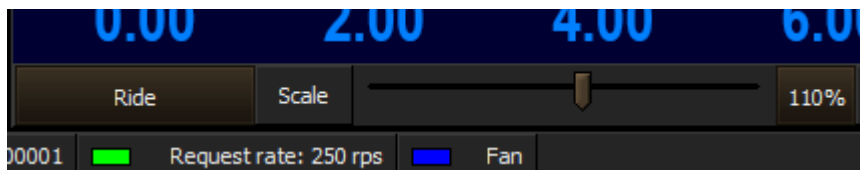
Grade This lets you adjust the feeling of the trainer if you want to ride a slope based workout but while using the watts ergometer based pacing bar to manually adjust your effort to keep the desired power.

Ergomode eliminates the need for the grade bar as the trainer will now auto adjust the break force so you are forced to ride at the % FTP indictaed for the interval. This is a kind of cruise control for selected indoor trainers like the Lynx VR Trainer, where all you need to do is attempt to keep your cadence steady and the trainer will make you rest or suffer as the workout dictates. With all the trainers its recommended that you ride in a mid range gear.

10. 3.   *Free ride mode and hotkeys*

Free ride mode allows you to set target watts directly during workout when it is in progress. In free ride mode the whole workout becomes one single interval with the target power set and adjustable by user. Free ride mode can be triggering by clicking any of the following keys:

"1" - Engages Free Ride mode. If already active then decrements target power by 10 watts. Same effect can be achieved by clicking "Left arrow" cursor key
"2" - Engages Free Ride mode. If already active then increments target power by 10 watts. Same effect can be achieved by clicking "Right arrow" cursor key
 "4" - Engages Free Ride mode. If already active then decrements target power by 50 watts. Same effect can be achieved by clicking "Left arrow" + "Ctrl" cursor keys.
"5" - Engages Free Ride mode. If already active then increments target power by 50 watts. Same effect can be achieved by clicking "Right arrow" + "Ctrl" cursor keys
 "7" - Cancels Free Ride mode. If already cancelled, scales the whole workout up by factor of 1.025. Same effect can be achieved by clicking "Up arrow" cursor key.
"8" - Cancels Free Ride mode. If already cancelled, scales the whole workout down by factor of   1.025. Same effect can be achieved by clicking "Down arrow" cursor key.

11.   **Automatic Software updates**

11. 1.   *Regular updates*

Upon start-up software connects to server and checks for updates. It is happening in the background and you will see "Getting updates" button and LED reflecting network activity showing in the top right corner of the screen. If the LED is grey it means that the software is trying to connect to server. If it is flashing then the software successfully connected to server and downloading whatever updates are due. Upon completion of download the LED turns steady green and the button caption changes to "Install updates". At this point you can click button and updates will be applied. If there are no updates to apply the button and LED will disappear. If downloading updates had failed (no Internet, timeout, etc.) then the LED will turn red and the caption of the button will change to "Retry updates". Some updates are

applied automatically and do not require user actions. In this case "Install Updates" button will not show up.

It is good idea to back up your "data" folder every once in a while.
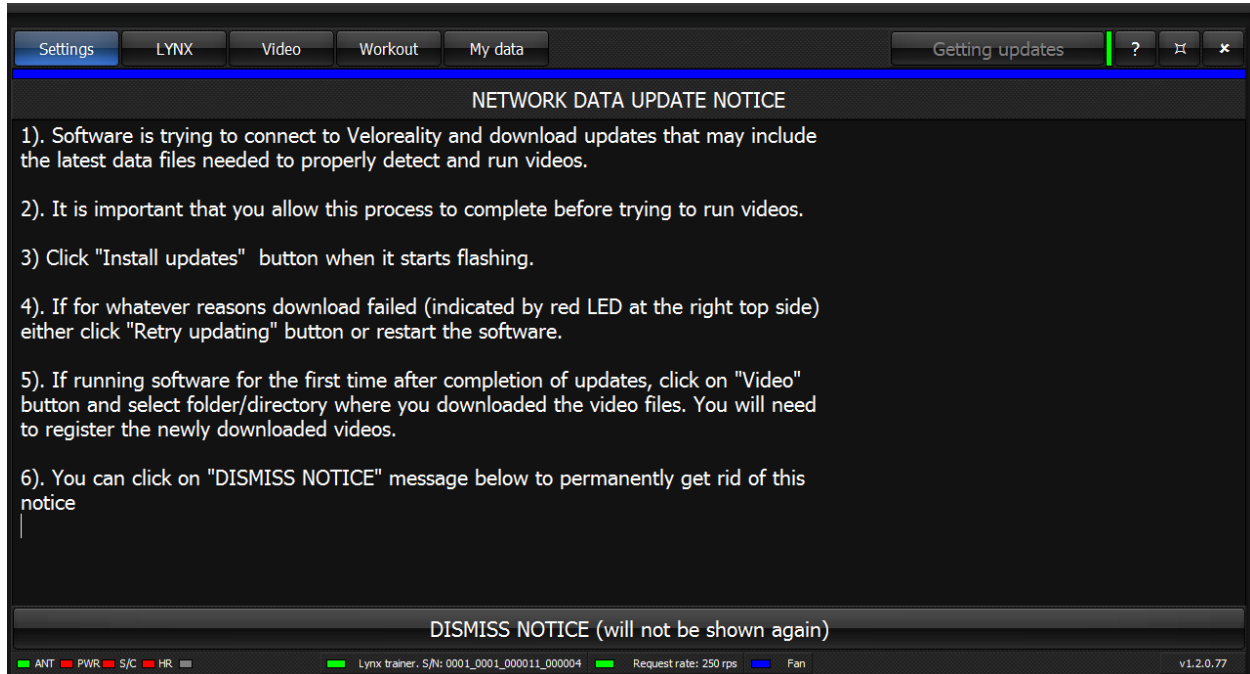
When the software is running first time you will also see "NETWORK DATA UPDATE NOTICE". It explains some steps recommended to be taken.