VonDutch's Better AI Tutorial for GTR2

Last update: 16 December 08

NOTE: none of this may apply to certain mods.
NOTE: these changes will cause "online mismatches".

AI SLOWDOWN

The "AI slowdown" problem is actually an aero damage issue. The AI bump and grind with each other (especially if you have raised the aggression level) and damage each other to the point where they slow down significantly over the course of a race.

- First you need to go to the **.dmg (damage) file of each and every team that you want to race against**.
- Look for this line: **"AeroMin=1100.0"**
- Raise this to **7500.0 or higher**.

What this does is raise the minimum amount of force that it takes for the AI (or your car for that matter) to become damaged. This number takes some trial and error to get right, but 7500 is a good start. Remember that the number can be different for the different vehicles in the game/race.

AI Stability and Handling

The AI will hardly budge if you give them a bump yet when they bump you it will send you flying off the track. What this does is make the AI much more human like. They will slide around and be less "perfect".

- Go to the **.hdc file in your "teams" directory** and edit this line:
  "AITorqueStab=(1.25, 1.25, 1.25)"
- Change this to:
  "AITorqueStab=(1.00, 1.00, 1.00)".

What this does is make the AI less stable and more like you. This number will vary from car to car but again 1.00 is a good start.

Next find these lines in your **.hdc**;

- **AIEvenSuspension=0.0** // averages out spring and damper rates to improve stability (0.0 - 1.0)
- **AISpringRate=1.0** // spring rate adjustment for AI physics (improves stability)
- **AIDamperSlow=1.2** // contribution of average slow damper into simple AI damper
- **AIDamperFast=0.4**

DO NOT make big changes here or the AI won't be able to complete a lap!!!
What's working for me now is this:

- **AIEvenSuspension=0.1** // averages out spring and damper rates to improve stability (0.0 - 1.0)
- **AISpringRate=1.0** // spring rate adjustment for AI physics (improves stability)
- **AIDamperSlow=1.1** // contribution of average slow damper into simple AI damper
- **AIDamperFast=0.3**

Engine Failure

If you want more engine failures/retirements in your race then go to the **.eng file in your "teams" directory** and change these lines:

- **LifetimeAvg=10800**
- **LifetimeVar=2250**

The lower you make "LifetimeAvg" the more engine failures will occur(yourself included) So try lowering this number gradually.

"LifetimeVar" is the amount of variability or "chance" that engine failure will occur. Raise this and you will see more failures. Lower and you should see less.

Setups

Setups do make a difference to the AI. If you spend the time finding a good setup for each vehicle that will be in your race it will be much more competitive and much more challenging for you. You can also have a qualify and race setup for the AI.

Again in your **"teams" folder** place your **setups for each track** and **name them like this**:

- Oschersleben.qual.svm
- Oschersleben.race.svm

Again **do this for each of the different types of cars that will be in your race or season**. You'll need to **do this for each track that you are racing at**. If you have any doubt refer to the .gdb of the track and look at the top line. This is the name of the track that you will use in the .svm file.

Player File

Now let's go to your **.plr** (player) file. You can find it here: **GTR2\UserData\your player name**.

Open it and find **"[Game Options]"**. Scroll down and find these lines:

- **AI Driver Strength="100"**
- **AI Power Calibration="7"** // Adjustments with AI strength (0=none, or add the following: 1=power, 2=gearing, 4=fuel)
- **AI Additional Fuel Mult="1.00000"** // Additional fuel multiplier for AIs because of their driving style
- **AI Brake Power Usage="1.13900"** // Fraction of theoretical brake power that AI attempt to use
- **AI Brake Grip Usage="0.97800"** // Fraction of theoretical brake grip that AI attempt to use
- **AI Corner Grip Usage="0.94900"** // Fraction of theoretical cornering grip that AI attempt to use
- **AI Max Load="38875.00000"** // Maximum total load to set up theoretical performance tables
- **AI Min Radius="20.00000"** // Minimum radius turn to set up theoretical performance tables
- **AI to AI Collision Rate="40"** // Detection rate per second (1-40) for AI-to-AI collisions
- **Player Car Equal="1"**

"AI Driver Strength": Self-explanatory.
"AI Power Calibration": I have experimented with this number and never really seen a difference so I use "7".
"AI Additional Fuel Mult": You can raise or lower this number. Higher = more fuel used by the AI; lower = less.
"AI Brake Power Usage": Raising this number above 1.00 helps to get rid of the "special brakes" the AI seem to have. They brake much more realistically with this number raised above 1.00. I have gone as high as 1.500.
"AI Brake Grip Usage": If you want the AI to use less brake, lower it; more brake, raise it. I have never gone above 1.00 though.
"AI Corner Grip Usage": Raise this number if you want the AI to corner harder lower it if you want them to use less of their max.
"AI Max Load": Lowering this from the default (which I think is 40000.00000) will result in a much more aggressive AI They will try to pass more and pass each other more.
"AI Min Radius": Leave this alone.
"AI to AI Collision Rate": I like this at 40 cause it hopefully lets the AI crash less. If you set this too low the AI will drive right through each other, so set it at 40.
"Player Car Equal": Setting this at 1 results in closer racing both in qualifying and the race. If you set it at 0 you will have more variability in lap times of the AI.

AI Qualifying and Race Speeds

Lastly go to the **.aiw file in each of the tracks that you want in your races**. Find these lines:

- **WorstAdjust=(0.7500)** // Used for 70% AI strength option
- **MidAdjust=(1.0200)** // Used for 100% AI strength option (note that AIs now use full throttle above 95% AI strength option)
- **BestAdjust=(1.1900)** // Used for 120% AI strength option
- **QualRatio=(1.0069)** // Used to adjust AI speed in qual compared to base values
- **RaceRatio=(1.0110)** // Used to adjust AI speed in race compared to base values

- If you want to **speed up the AI, raise the "adjust" lines.**
- If you want the AI to **qualify faster, raise** the **QualRatio** line, or **decrease** it if you want them to **qualify slower** (you can lower it below 1.00).
- If you want to make the AI drive faster in a race, **raise** the **RaceRatio**.

Additional Information from Others

"carham" wrote:
I have found using the QualRatio and the RaceRatio to be an easy way of making satisfactory changes in AI performance.

"Grandpa Racer" wrote:
I also find, that when I improve the AI car performance by assigning my set-up files to them, the QualRatio and RaceRatio values need to be revised to keep the competition level the way I want it. I keep a reference table for the values for each track and car.