

Editable Mathematical Channels support

Since the 2.1.25 release, E-Race supports the Mathematical Channel editable by end-user. These channels are fully customisable, in a ini-style file, XAP DATA\INIFILES\MATH.INI

Each section of this file represents a channel that will be computed for each "Pilot" selected in the Data Manager, every time the files are loaded. The name of the section is the name of the channel. The section also contains the numbers of steps, and a string representing the operation. The operation is in postfix (or Inverse Polish) notation as it is available on HP calculators. The step separator is the \square symbol. There must be one at the end of the string.

Example (extract of math.ini file):

```
[GCAR]
nb=6
Operations=<G_LONG>□SQ□<G_LAT>□SQ□+□SQRT□
```

GCAR is the name of the channel.
There are 6 different steps in the operation pile.
The operation pile is :
<G_LONG>
SQ
<G_LAT>
SQ
+
SQRT

This can be interpreted by $SQRT(G_LONG^2 + G_LAT^2)$. (SQRT = Square Root)

The physical channels are materialized by "<>". The name to indicate is the name of the channel in E-Race. The channel will be linear-interpolated to reach a frequency of 200Hz, so you can use channels of different frequencies. You can "shift" channels to achieve filters, with the "[+/-]" notation.

Example:

```
[RPMMOY]
nb=5
Operations=<RPM[-2]>□<RPM[+2]>□+□2□/□
```

The available operations are :
+, -, x, /, SIN, ASIN, COS, ACOS, TAN, ATAN, SQ, SQRT, INV.

The number of steps is unlimited, but the interpretation pile is limited to 16 steps.