- English -

2D_ValidateTracks

1   Revision History

Revision	Description	Release Date	Author
0	Initial Release	2022-01-10	FS

2   Table of Contents

3   Introduction

User definable GPS Triggers can be combined to create measurement track channels between or inside trigger point, which are very convenient for further data analysis in the CalcTool as BOOL Channels for further calculations or as phases for Exports, Min/Max Tables, plots, etc.

- For more information about channel *GPSTracks* please see the respective manual on 2D website:
http://2d-datarecording.com/downloads/manuals/

With **2D_*ValidateTracks*** additional, for the evaluation of the previously created GPSTracks channels, are created (DistanceInTrack, TimeInTrack, IsTrack, …).

For subsequent, developmental calculations of the GPSTrack channels, different CalcTool commands can be used in combination with the ValidateTrack channels.

- The calculation file is designed to also be compatible to other calculational tasks!

4   Calculation file

4.1   Repository

The 2D_*ValidateTrack*s calculation file, where the user must determine which channels are to be analysed, is stored under *<UserDataDir>\CALFiles\2DCalFiles*, with the name **ValidateTracks_Office2D.CAL**.

- <UserDataDir>: Open *WinARace* → [CTRL] + [ALT] + [U]
- This *ValidateTracks_**Office2D.CAL*** should serve as examples of how the CAL file should be edited.

If *ValidateTracks* calculation file should be used for a certain measurement, the user should copy the CAL file **ValidateTracks_Office2D.CAL** into the respective event folder and replace the addition *_Office2D* with a name of his choice.

- Only the CAL file in the event folder should then be edited by the user specified by the respective purpose of the event

4.2   Structure

The calculation file is separated in different areas where not every group should be edited by user.
Only groups with the following command should be edited by user:

```
;USER EDIT:
```

4.2.1   [TrackNr]

In this group the user can chose if all GPSTracks (activated line) or only determined GPSTracks (e.g., only GPSTrackNr 2) should be used for further calculations.

```
[TrackNr]
TrackNr = If(#GPSTrackNr,>,0,#GpsTrackNr,0)
;TrackNr = If(#GPSTrackNr,=2,0,2,0)
```

- By replacing *#GPSTrackNr* the 2D_ValidateTrack calculation file can be used also for analysing other channels!

4.2.2   [TrackChannels]

In this group, channels are created that describe the generated GPS Tracks.

Created channel:	Description:
IsTrack	Boolean TRUE ("1") when a GPSTrack is active.
TimeForTrack	Absolute Time of the current track in seconds
TimeInTrack	Relative Time of the current track in seconds
RelTimeInTrack	Relative Time of the current track in percent
SOT	Start of Track
EOT	End of Track
DistanceInTrack	Absolute Distance of the current track in meters
DistanceForTrack	Relative Distance of the current track in meters
Trackcnt	GPSTrack count channel
LapNr	Creating laptriggers at every END of a GPSTrack

- Laptriggers at every end are suitable for analysing GPSTracks with 2D MinMax table with using the parameter "LapEnd" or for export function.
  If not required line "LapNr" can be deactivated with semicolon!

4.2.3 [TrackEvaluations]

In this group the channel evaluation takes place by using (signal analysis) CalcTool commands in combination with the channel #IsTrack.

- For more information about *WhileTrue commands* and all other signal analysis commands please see the chapter ***Fehler! Verweisquelle konnte nicht gefunden werden.*** in CalcTool manual on 2D website:
http://2d-datarecording.com/downloads/manuals/

Example Average speed:

```
V_AVG              = AvgWhileTrue(@Int_Speed,#IsTrack)
```

AvgWhileTrue command continuously calculates the average value of a SourceChannel (e.g., @Int_Speed) if a BoolChannel is > 0 (#IsTrack).

- As Source channel the special channel @Int_Speed was used but also every other (normal) channel can be used as SourceChannel!

- For more information about *Special channels* please see the CalcTool manual on 2D website:
http://2d-datarecording.com/downloads/manuals/

This group can be expanded by the user depending on the different purpose of evaluation!

(If any special commands or tasks are required, please contact us via info@2d-datarecording.com)

5 Appendix

5.1 Following Toolchains

Toolchains always consist of one or more calculation files and are used in postprocessing to realise various functions.

Many toolchains can be combined in a meaningful way to create a complex evaluation functionality.

- For more information about *Toolchains* please visit the download area of our website and have a look at the chapter *Toolchains in CalcTool* manual.
https://2d-datarecording.com/en/downloads/manuals/