

DTNR Race Tool

User Manual v1.0

As of: March 2025

Contents

1	Introduction	3
1.1	What can the Race Tool do?	3
2	Installation and First Launch	3
2.1	Installation	3
2.2	First Launch	3
2.3	System Requirements	3
3	User Interface Overview	4
3.1	Side Panel Tabs	4
3.2	The Connection Panel	4
4	Creating a Race	7
4.1	Setting Up a New Race	7
4.2	Saving and Loading Races	7
4.3	Defining the Race Route	7
5	Race Phases	7
5.1	Adjusting Race Parameters	8
6	Managing Teams	8
6.1	Team Registrations	8
6.2	Team Status	9
6.3	Team Context Menu	9
7	The Official Race Route	9
7.1	Race Route on the Map	9
7.2	Checkpoint System	9
8	Live Map	11
8.1	Team Positions	11
8.2	Map Controls	11
8.3	Display Options	11
9	Race Start and Countdown	11
9.1	Opening a Race	11
9.2	Triggering the Start	11
10	Standings and Results	12
10.1	Standings (Live Data)	12
10.2	Statistics Tab	12
11	Race Log	12
12	Analysis Mode	12
12.1	Switching Modes	13
12.2	Loading a Race	13
12.3	Replay Controls	13
13	Settings	15
13.1	Map Settings	15
13.2	Default Folders	15

14 File Formats	15
14.1 Race File (.race)	15
14.2 Route (.route)	15
14.3 Race Log (.log)	15
15 Racing - Best Practices	15
15.1 Before the Race	15
15.2 During the Race	15
15.3 After the Race	16
16 Troubleshooting	16

1. Introduction

The **DTNR Race Tool** is the race management component of the Daymar Tactical Navigation & Racing project. It is used to organise and run races on the moon Daymar in the game Star Citizen.

The Race Tool is designed for race directors who plan, start, and supervise races. It provides a live map with real-time positions of all participating teams, comprehensive race data, and a full communication bridge to every connected Nav Tool.

1.1 What can the Race Tool do?

- Create, open, and start races (phases: Created → Open → Starting → Started → Finished)
- Live tracking of all teams on an interactive Daymar map
- Receive and visualise transponder data
- Automatic checkpoint and finish-line detection
- Real-time standings with speed charts per division (Bike, Buggy, Truck)
- Analysis mode for loading and replaying past races
- Automatically distribute the race route and update interval to all participants
- Load and evaluate race archives from the server or locally

2. Installation and First Launch

2.1 Installation

The Race Tool can be installed together with the Nav Tool via the **DTNR Installer**. It is a separate component that can be selected during installation.

2.2 First Launch

On first launch the tool automatically creates the required directories:

Directory	Contents
/DTNR-RaceTool/config/	Configuration files
/DTNR-RaceTool/resources/	Map data, icons
/DTNR-Tool/logs/	Log files (shared)

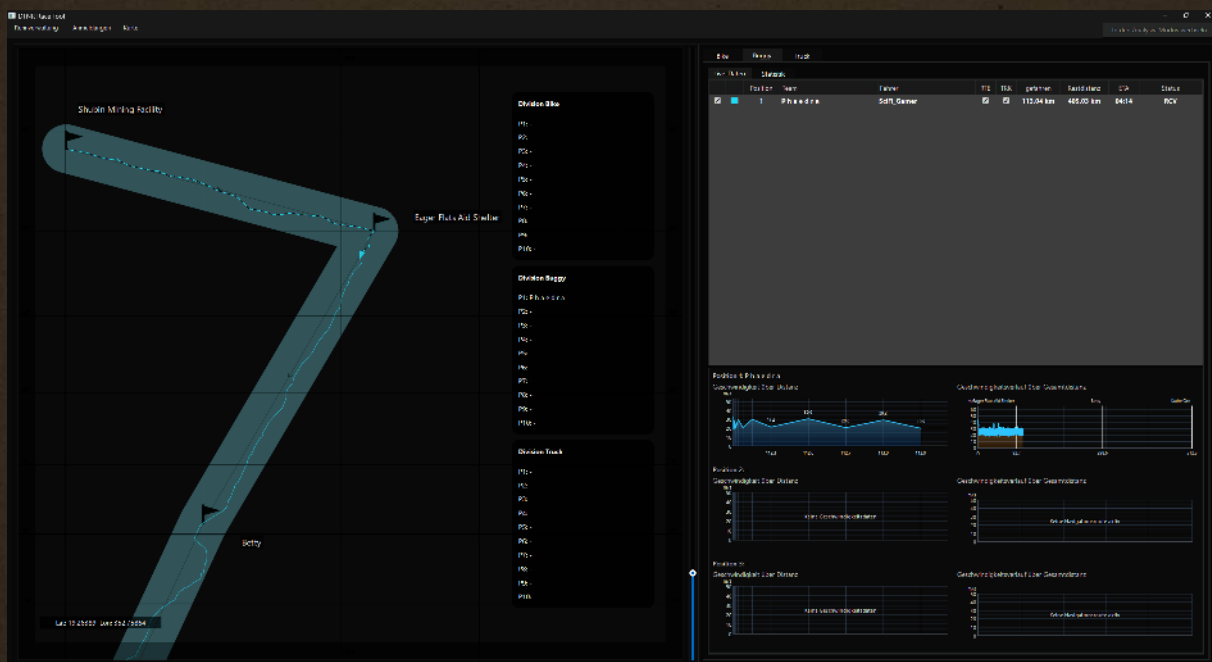
2.3 System Requirements

- Windows 10 or 11
- Screen resolution: at least 1920×1080
- Network connection for receiving transponder data

3. User Interface Overview

The interface is divided into three main areas:

Area	Position	Function
Map view	Left (large area)	Live map with team positions and race route
Zoom control	Centre (narrow strip)	Vertical slider for zoom
Side panel	Right	Tabs for race control and data



The DTNR Race Tool user interface

3.1 Side Panel Tabs

The side panel is organised by vehicle division:

Tab	Contents
Bike	Live data and statistics for the Bike division
Buggy	Live data and statistics for the Buggy division. Also contains the Connection panel (server selection, Connect/Disconnect, team feed log)
Truck	Live data and statistics for the Truck division

Each division tab contains two sub-tabs:

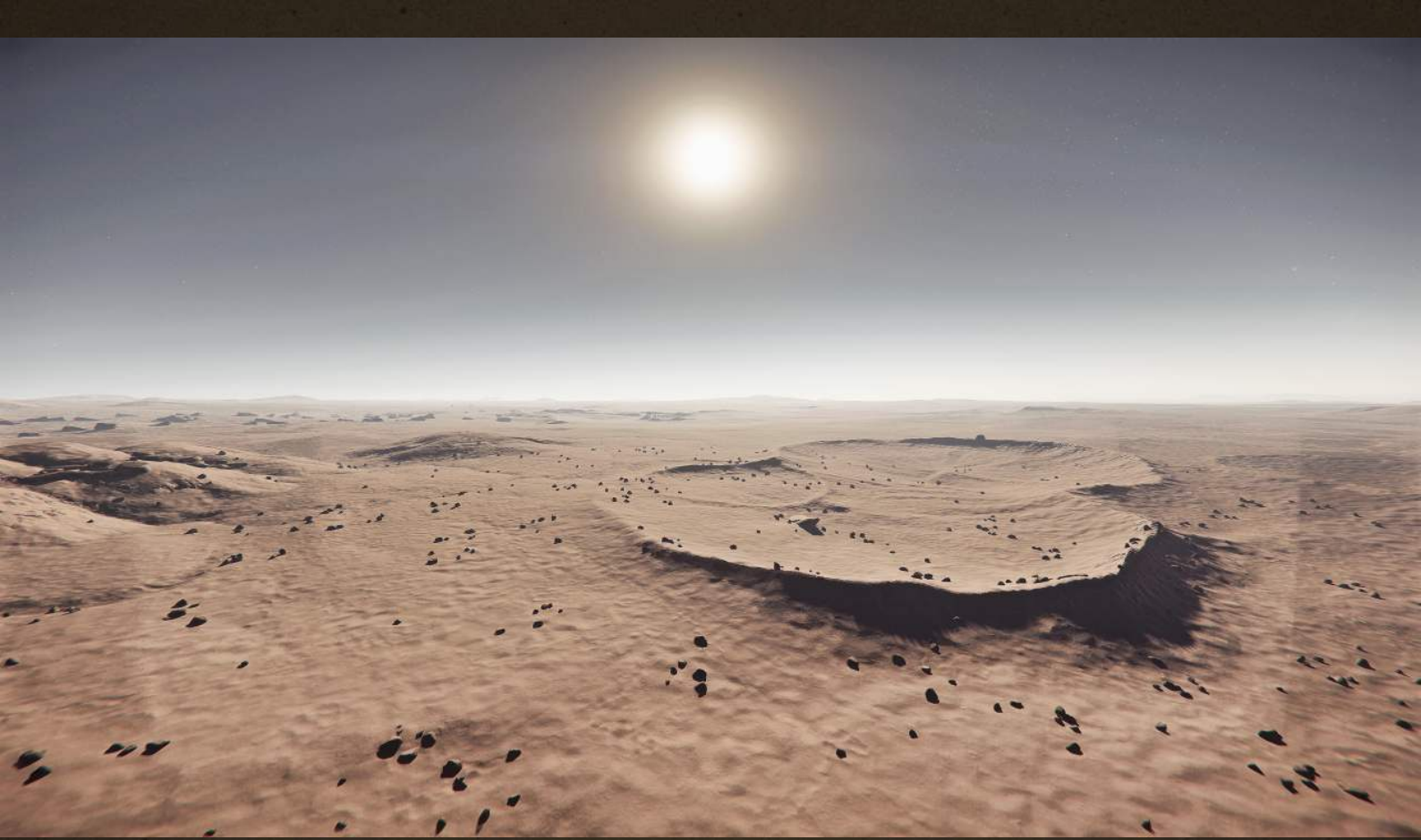
- **Live Data** – Current standings table and speed charts for the top 3
- **Statistics** – Top-10 table with remaining distance, ETA, average speed, pace, splits, and trend

3.2 The Connection Panel

The **Buggy** tab hosts the connection panel for managing the server connection:

- **Server dropdown** – Select the race server (e.g. DTNR-Europe)
- **Connect / Disconnect** – Establish or terminate the WebSocket connection

- **Status indicator** – Shows connection status, time of last update, and number of connected teams
- **Team feed log** – Scrollable log of incoming team messages



RACE MANAGEMENT

4. Creating a Race

4.1 Setting Up a New Race

1. Menu **Race Management** → **Create Race**
2. Enter the basic data in the dialog:

Field	Description
Race name	A unique name for the race
Official route	A .route file containing the official course (from the routes/ folder)
Division	Permitted vehicle classes: Bike, Buggy (default), Truck
Date	Planned race date
Time	Planned start time (15-minute intervals)

The race route and update interval are distributed automatically to every participant when they join. You do not need to communicate these settings to each driver individually.

4.2 Saving and Loading Races

Use **Race** → **Save Race** to save the current race configuration. Saved races can be restored via **Race** → **Load Race**.

4.3 Defining the Race Route

The race route is a **.route** file that can be created in the Nav Tool:

1. Create the course as a new route in the Nav Tool
2. Save the route as a **.route** file
3. Select this file as the official route when creating the race

5. Race Phases

A race passes through several phases:

Phase	Status	Description
1 - Created	Created	Race is configured; teams can register
2 - Open	Open	Race is open; registrations are approved and teams can join
3 - Starting	Countdown	Countdown is running; teams are getting ready
4 - Started	Active race	Live tracking of all teams; standings are updated
5 - Finished	Finished	Results are final; analysis is available

Phase transitions are triggered via the **Race Management** menu:

- **Create Race** → Created phase

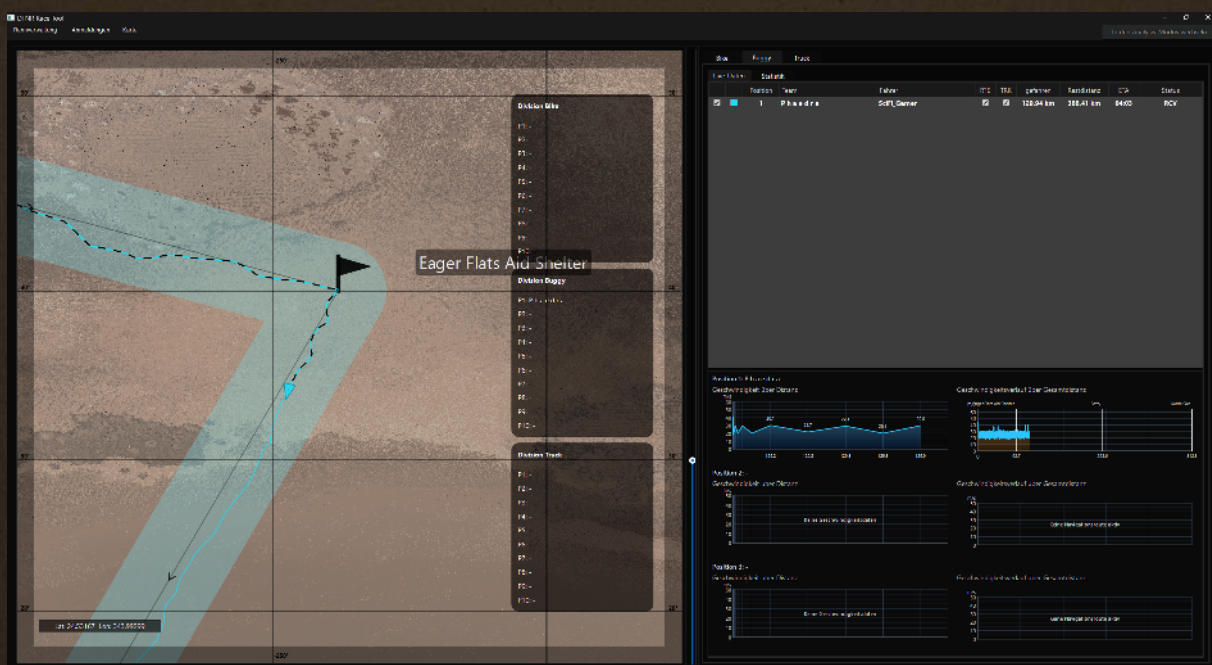
- **Open Race** → Open phase (teams can join)
- **Start Race** → Opens the start dialog with a large start button and countdown
- **End Race** → Finished phase

5.1 Adjusting Race Parameters

Via **Race Management** → **Race Parameters** two parameters can be adjusted live during the race:

- **Countdown duration** - Length of the countdown before the race starts (1-240 minutes). Cannot be changed while the countdown is already running.
- **Update interval** - Position query interval for participants (1-120 seconds). Transmitted in real time to all connected Nav Tools.

6. Managing Teams



Live team management with position data

6.1 Team Registrations

When drivers register for your race in the Nav Tool:

1. Open **Registrations** → **Manage Registrations**
2. The dialog shows available races on the left and pending registrations on the right
3. Select one or more teams and click **Approve**

6.2 Team Status

Status	Colour	Meaning
Pending	Yellow	Registration awaiting approval
Approved	Green	Team is approved
Joined	Blue	Team has joined the race
Ready	Green (bright)	Team has confirmed ready status
Racing	White	Team is actively racing
Finished	Gold	Team has crossed the finish line
DNF	Red	Did Not Finish - team retired

6.3 Team Context Menu

Right-clicking a team in the standings table offers:

- **Centre on map** - Jumps to the team's position on the map

7. The Official Race Route

7.1 Race Route on the Map

The official race route is displayed on the map:

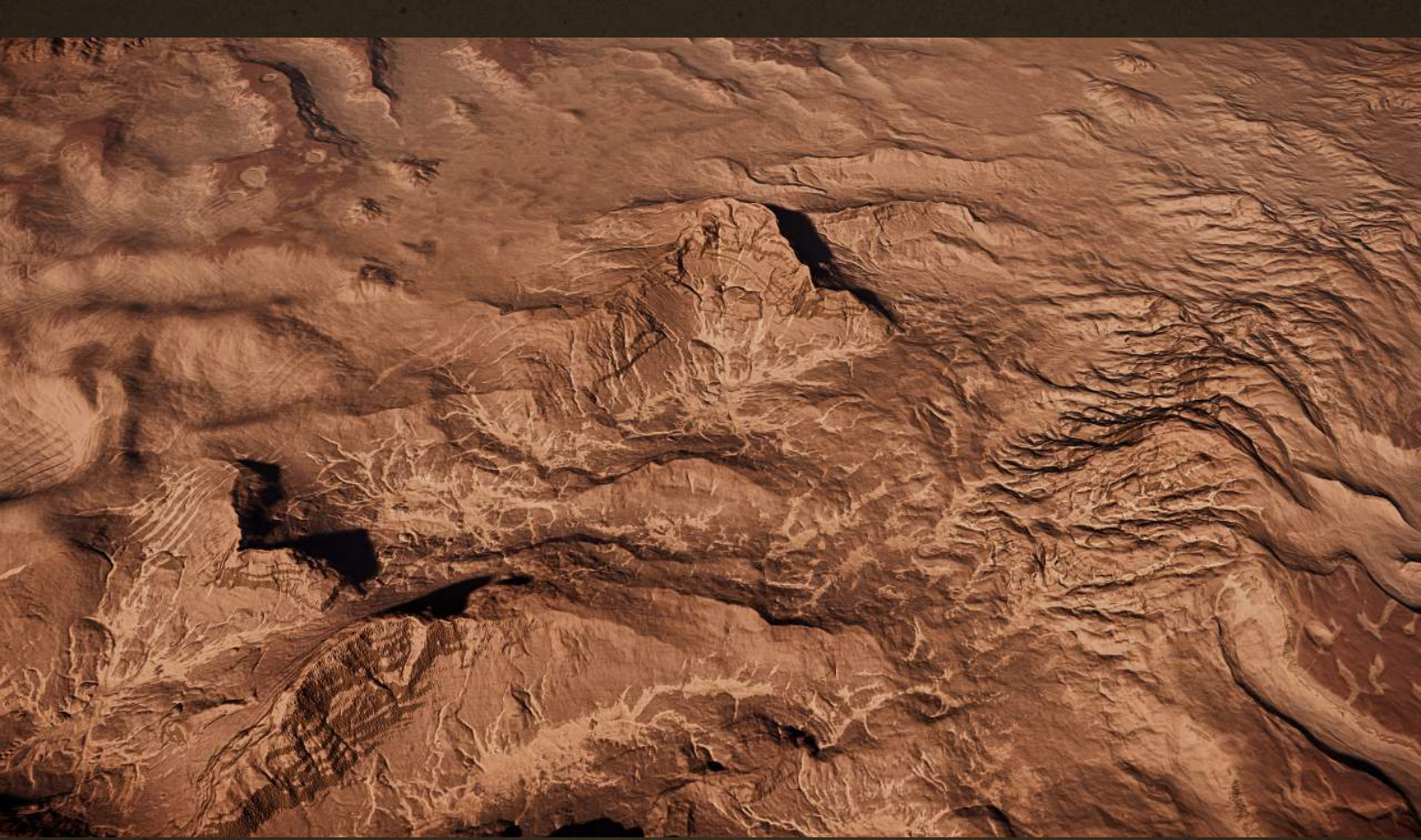
- **Semi-transparent corridor** along the course
- **Direction arrows** indicating the driving direction
- **Checkpoints** as numbered waypoints
- **Start/finish flags** at the beginning and end

7.2 Checkpoint System

The Race Tool automatically detects when a team passes a checkpoint:

- Checkpoints have a configurable passage zone
- Each passage is recorded in the race log
- The standings table is updated automatically

Passage detection is based on transponder positions. Placing checkpoints near unavoidable route points ensures that every vehicle is captured.



LIVE & ANALYSIS

8. Live Map

8.1 Team Positions

All active teams are displayed as markers on the live map:

- **Marker colour** corresponds to the team's division
- **Team label** shows the team name
- **Trail** shows the team's route so far (last n points)

8.2 Map Controls

Action	Control
Pan map	Hold left mouse button and drag
Zoom	Scroll mouse wheel or use the slider
Centre on team	Double-click a team marker or right-click → Centre
Show all teams	Map → Zoom to All Teams

8.3 Display Options

- **Map** → **Show Team Trails** - Toggle historical positions
- **Map** → **Show Official Route** - Toggle the race route
- **Map** → **Day/Night Rendering** - Toggle lighting simulation
- **Map** → **Map Grid** - Toggle coordinate grid

9. Race Start and Countdown

9.1 Opening a Race

After creating a race it must be opened via **Race Management** → **Open Race**. Only then can teams register and join.

9.2 Triggering the Start

1. Select **Race Management** → **Start Race**
2. A large **Start** button appears in the start dialog
3. Click **Start** - a countdown begins (configurable duration, default: 1 minute)
4. The countdown is sent to all connected Nav Tools and displayed prominently
5. When the countdown reaches zero the race starts automatically

You can stop the countdown at any time via the **Cancel** button in the start dialog. The race will then return to the Open phase.

10. Standings and Results

10.1 Standings (Live Data)

During the race the standings table in each division tab shows:

Column	Meaning
Position	Current ranking
Team	Team name
Driver	RSI handle of the driver
RTE / TRK	Route / tracking status
Driven	Distance covered
Remaining	Remaining distance to the finish
ETA	Estimated time of arrival
Status	Current team status (Racing, Finished, DNF, ...)

Below the standings, **speed charts** are displayed automatically for the top 3:

- **Speed over distance** - Pace along the distance covered
- **Route speed profile** - Pace over the full route distance

10.2 Statistics Tab

The **Statistics** sub-tab shows an extended top-10 table with additional metrics:

- **Remaining / ETA** - Remaining distance and estimated arrival
- **AVG** - Average speed
- **Pace** - Current pace
- **T1-T4** - Split times
- **Trend** - Tendency (speeding up / slowing down)

11. Race Log

The Race Tool records all race events in chronological order. Log entries appear in the status bar and are written to the log file.

Typical entries:

- **Team events** - Registration, approval, joining
- **Race** - Phase changes, countdown, start, finish
- **System** - Connection established, disconnected, position updates

Log files are located under `%LOCALAPPDATA%/DTNR-Tool/logs/`.

12. Analysis Mode

The Race Tool can replay and analyse completed races.

12.1 Switching Modes

Click the **Switch to Analysis Mode** button in the upper right corner of the window. Alternatively: **File** → **Switch to Analysis Mode**. The same path leads back to Live Mode.

12.2 Loading a Race

In Analysis Mode, open **File** → **Race Management** to see a dialog with two sources:

- **Server archive** - Completed races from the server
- **Local archive** - Locally stored **.race** files

Select a race and click **Load**.

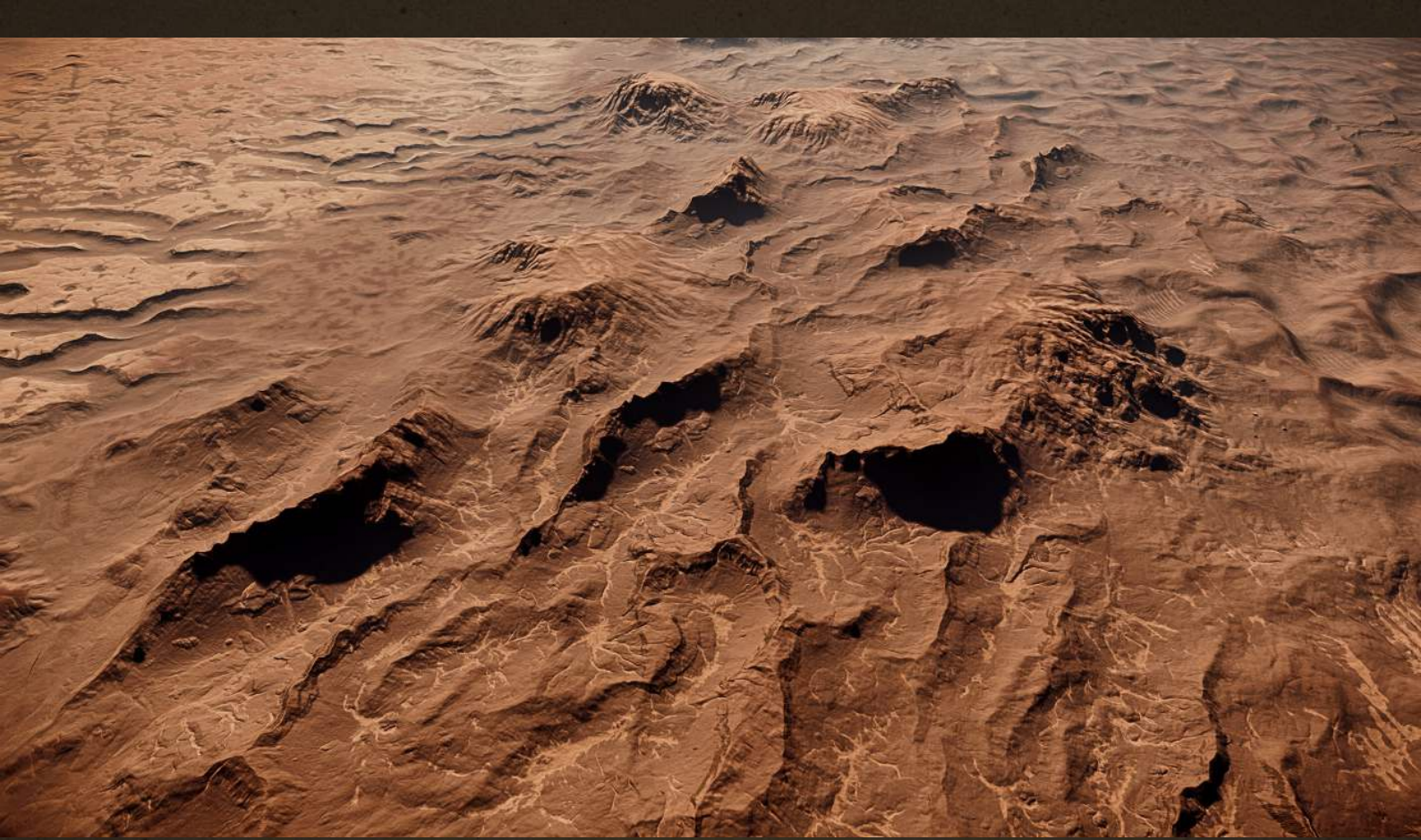
12.3 Replay Controls

After loading, a replay bar appears at the bottom of the window:

- **Slider** - Freely choose a point in the race timeline
- **Play / Pause** - Start and pause playback
- **Speed** - 0.5×, 1×, 2×, or 4× playback
- **Frame info** - Shows the current point in time

The map and standings update in sync with the playback position.

Use Analysis Mode to review race events or optimise strategies based on past races.



CONFIGURATION

13. Settings

The following options can be configured via the **Settings** menu:

13.1 Map Settings

- **Map layer** – Choose primary or secondary map
- **Day / Night** – Toggle rendering mode

13.2 Default Folders

- **Default folder for race files** – Path where `.race` files are saved and searched
- **Default folder for routes** – Path for `.route` files

14. File Formats

14.1 Race File (.race)

JSON file containing the full race configuration:

- **name** – Race name
- **date / time** – Date and time
- **divisions** – Enabled divisions (Bike, Buggy, Truck)
- **route** – Embedded race route
- **teams** – List of all registered teams with status
- **phase** – Current race phase
- **snapshots** – Recorded position data for replay

14.2 Route (.route)

Identical to the Nav Tool – JSON with waypoints.

14.3 Race Log (.log)

Text file with timestamped entries of all race events. Created automatically and updated continuously.

15. Racing -- Best Practices

15.1 Before the Race

- Drive the course in the Nav Tool beforehand to verify it
- Run a test race with 2-3 teams to validate connectivity
- All participants should use the latest version of the Nav Tool

15.2 During the Race

- Keep an eye on standings and the map
- Adjust race parameters (update interval) as needed
- Monitor the race log continuously for later analysis

15.3 After the Race

- The race file is archived automatically
- Replay and analyse the race in Analysis Mode
- Share the results with all participants

16. Troubleshooting

Problem	Possible Solution
Team does not appear on the map	Check whether the transponder is enabled in the team's Nav Tool and whether a server connection exists.
Connection to server fails	Verify the server address in config.json. Check firewall settings.
Race cannot be started	The race must be in the Open phase. At least one team must have joined.
Standings are not updating	Check whether the race is in the Started phase (not Created or Finished).
Analysis Mode shows no data	Make sure a valid .race file with snapshot data has been loaded.

Log files can be found under `%LOCALAPPDATA%/DTNR-Tool/Logs/`.