SectorHUD

User Manual

Overlay Tool for Euro Truck Simulator 2 and American Truck Simulator

1. Overview

SectorHUD is a Windows tool for Euro Truck Simulator 2 (ETS2) and American Truck Simulator (ATS). It reads live telemetry data from the running game and displays a freely positionable, transparent overlay on screen.

1.1 Features at a Glance

- Display of the current map sector (e.g. sec+0012-0004) and the highest-priority mod active in that sector
- Display of job information (origin, destination, remaining travel time in game time and real time, estimated arrival time)
- Display of the current real-time clock
- SQLite database that catalogues all enabled mods together with the map sectors they cover
- Database query: look up the mods covering any given sector or coordinate pair
- Fully configurable: font, size, position, transparency, which fields to show, format strings
- Multi-monitor support
- Demo mode for testing without a running game

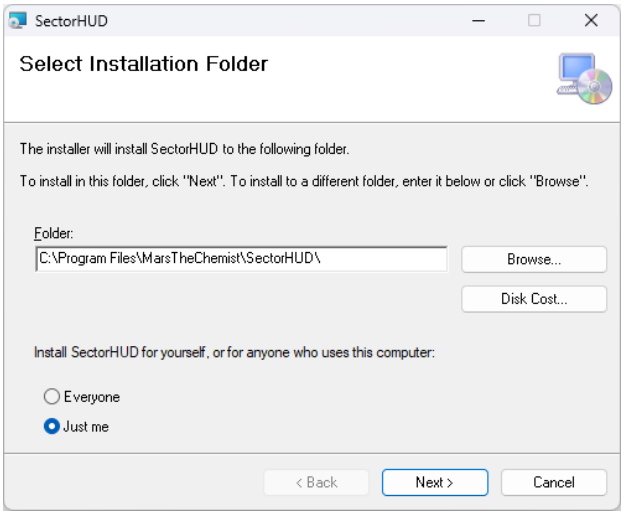
1.2 Requirements

Component	Description
Windows 10/11 (64-bit)	Operating system
.NET 6 or later	Application runtime environment
Euro Truck Simulator 2 or American Truck Simulator	One of the supported games (Steam or standalone)
Funbit ETS2 Telemetry Web Server (Ets2Telemetry.exe)	Reads game telemetry and exposes it via an HTTP API. SectorHUD can start it automatically when the path is configured. Download: https://github.com/funbit/ets2-telemetry-server
extractor.exe (SKZK/SCS extractor)	Reads the file listings of SCS/ZIP mods to detect map sectors. Included with SectorHUD, but can also be downloaded from https://github.com/sk-zk/Extractor.

2. Installation and First Launch

2.1 Installation

- Extract the SectorHUD installation package (SectorHUD_Setup.zip) and start the installation by double-clicking on setup.exe.
- Follow the instructions in the setup program.



> ⚠ **Important:** Before starting SectorHUD for the first time, make sure the ETS2 Telemetry Server is installed (download link see chapter 1.2) and its path is known. SectorHUD searches common installation directories automatically.

2.2 First Launch

On the very first launch, SectorHUD automatically creates a configuration file at:

```
%APPDATA%\MarsTheChemist\SectorHUD\SectorHUD.ini
```

SectorHUD automatically detects:

- the Steam installation path of ETS2 and ATS (via the Windows Registry)
- the game's Documents folder (path to game.log.txt and the mod folder)
- the path to the ETS2 Telemetry Server (searches common directories)
- the path to extractor.exe (in the program folder)

> ℹ **Note:** The configuration can be adjusted at any time via Settings → Edit Configuration. If any paths were not found automatically, enter them manually there.

3. User Interface

The SectorHUD main window consists of three areas:

- Menu bar (top)
- Output area (centre) – displays telemetry data in text form
    - Status bar (bottom) – shows the current program status

3.1 Menu Bar

Menu	Entry	Function
File	Exit	Closes SectorHUD (automatically stops the monitor first).
Database	Query ETS2	Manually query the ETS2 database for mods at a given sector or coordinate pair.
Database	Query ATS	Manually query the ATS database.
Database	Update ETS2	Scans all active ETS2 mods and updates the database (existing entries are kept; priorities are reassigned).
Database	Update ATS	Scans all active ATS mods and updates the database.
Database	Recreate ETS2	Deletes the entire ETS2 database and rebuilds it from scratch.
Database	Recreate ATS	Deletes the entire ATS database and rebuilds it from scratch.
Database	Show log file	Opens the scan log file in the default text editor.
Monitor	Start	Starts the monitor: the overlay appears and telemetry polling begins (every 5 seconds).
Monitor	Stop	Stops the monitor and closes the overlay.
Monitor	Demo	Displays sample data in the overlay and output area without needing a running game.
Settings	Edit Configuration	Opens the graphical configuration editor.
Help	Info	Shows version number, build date, copyright, database and INI paths, and database statistics.
Help	Instructions	Opens this user manual as a PDF.

3.2 Output Area

Once the monitor is running and a connection to the telemetry server is established, the following information is displayed:

General Information

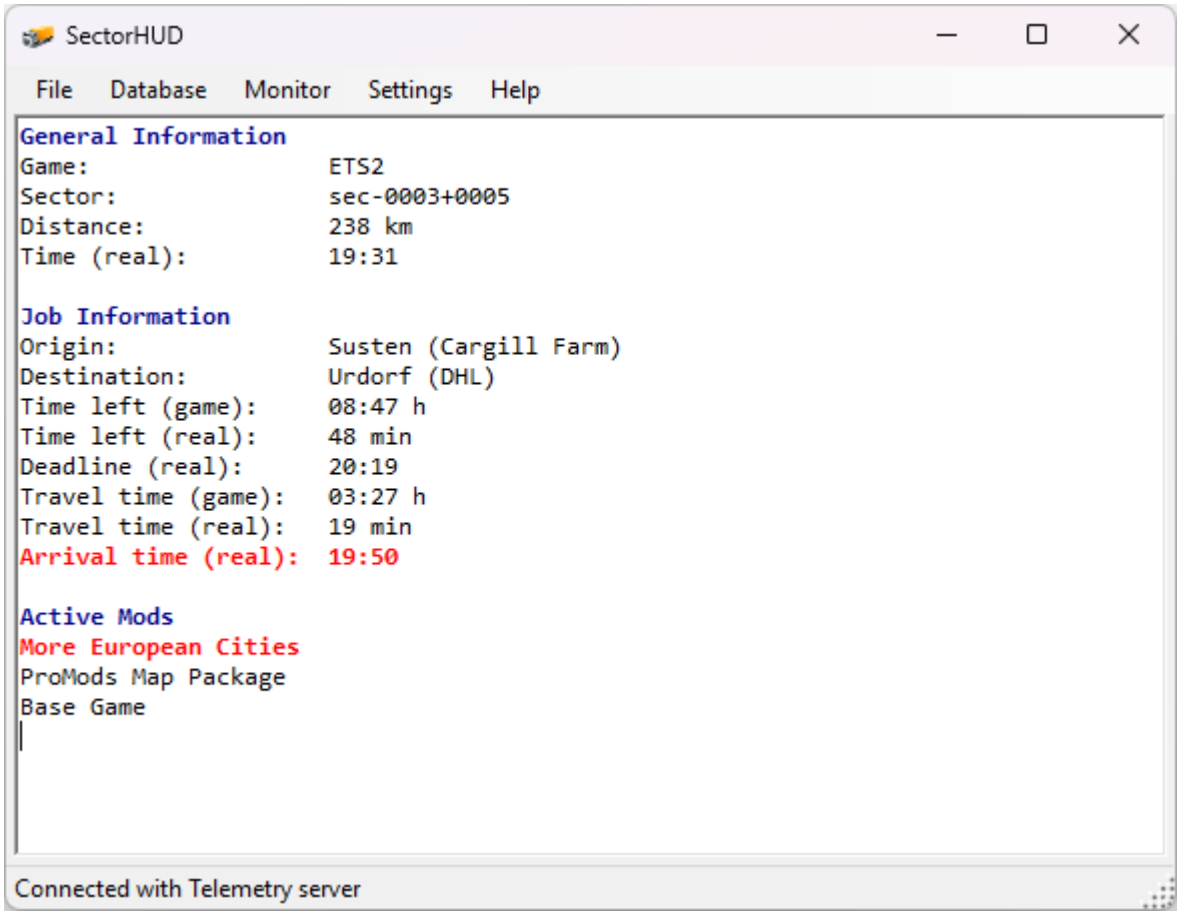
Field	Description
Game	ETS2 or ATS
Sector	Current map sector in the format sec+XXXX-YYYY
Distance	Remaining route distance in km or mi
Clock	Current system time (real time)

Job Information (only when a job is active)

Field	Description
From	Origin city and company of the job
To	Destination city and company of the job
Remaining game time	Time remaining on the job deadline in game-time format HH:MM
Remaining game time (real)	Converted real-world minutes (rolling average of the time scale factor)
Remaining real time	Current clock time plus remaining real-world duration
ETA game time	Estimated arrival time from the navigation system in game time HH:MM
ETA game time (real)	Navigation ETA converted to real-world minutes
ETA real time	Estimated real-world arrival time (displayed bold, highlighted in red)

Active Mods

Shows all mods that cover the current sector, sorted by priority (highest first). The top-ranked mod is highlighted **bold and in red.** If no mods are known for the current sector, "No mods found" is shown.



4. Monitor and Overlay

4.1 Starting the Monitor

Choose Monitor → Start, or set Autostart = True in the configuration. On start:

- SectorHUD checks whether the telemetry server is already running and starts it automatically if not (provided TelemetryPath is correctly set). The program then waits 5 seconds for the server to initialise.
- The overlay window opens on the configured monitor.
- Telemetry data is polled every 5 seconds. If no values have changed, the overlay is not redrawn (saves resources).

4.2 Overlay Window

The overlay is a transparent, always-on-top window (Topmost) drawn over the game. It has a semi-transparent black background (transparency is configurable) and displays the formatted text.

- Position: PositionX / PositionY in the configuration (pixel offset from the top-left corner of the target monitor)
- Font: any installed Windows font, size in points
- Transparency: 0 = fully opaque, 100 = fully transparent (default value 75 gives a slightly transparent background)
- Corners: CornerRadius 0 = sharp corners, 1-20 = rounded corners
- Monitor: DisplayIndex 0 = primary monitor, 1 = second monitor, etc.

4.3 Demo Mode

Monitor → Demo shows sample data (ETS2, sector sec-0004-0002, job Berlin→Zürich, mod chain). Ideal for testing overlay positioning and formatting without a running game.

4.4 Connection Status

Overlay Text	Meaning
SectorHUD Ready (green)	Monitor is running, waiting for a game connection
SectorHUD Waiting for game… (yellow)	No connection to the telemetry server / game not started
Normal overlay content	Connection active, data is being displayed

5. Database

5.1 Database Structure

SectorHUD uses a SQLite database stored at:

```
%LOCALAPPDATA%\MarsTheChemist\SectorHUD\SectorHUD.db
```

The database contains four tables:

Table	Contents
ets_mods	All scanned ETS2 mods (name, filename, priority, file date)
ets_sectors	All known sectors for ETS2 mods (X, Y, mod ID)
ats_mods	All scanned ATS mods
ats_sectors	All known sectors for ATS mods

> ℹ **Note:** Mod priority corresponds to the load order in the game's game.log.txt. Mod no. 1 (lowest number) has the highest priority and is highlighted in the overlay.

5.2 Updating the Database

The database should be updated before first use and after any change to the mod list in the game. Choose Database → Update ETS2 or Database → Update ATS.

The scan process:

- SectorHUD reads the game's game.log.txt and determines the active DLCs and local mods along with their load order (= priority).
- The base game (base_map.scs) is also included.
- For each mod file (.scs or .zip), extractor.exe is run to determine the map sectors it contains. A fast shallow scan is attempted first; if it returns fewer than 5 lines, a deep scan follows.
- New or changed mods (file date has changed) are fully re-scanned. Unchanged mods only receive their updated priority.
- Progress is shown in the status bar.

> ℹ **Note:** Some encrypted mods require deep scans, which can be very slow. With very large map combinations, it can take up to an hour to parse all sectors.

> ⚠ **Important:** To ensure that game.log.txt contains the correct load order for the current profile, you must restart the game completely and then exit it again after making changes in Mod Manager or switching to a different profile.

> ⚠ **Important:** The monitor is automatically stopped during a database scan. After the scan completes, the monitor must be restarted manually.

5.3 Recreating the Database

Database → Recreate ETS2 (or ATS) deletes all existing entries for that game and rescans all mods completely from scratch. Use this function when:

- mods have been removed and the old entries should be cleaned up
- the priority order should be fully reset after a major reorganisation of the mod list
- the database appears to be corrupted

5.4 Querying the Database

Via Database → Query ETS2 (or Query ATS) you can manually check which mods cover a specific sector. The input field accepts two formats:

Format	Example	Description
Sector name	sec+0012-0004	Direct sector format as shown in the overlay
Coordinates	48000,-16000	Game-world coordinates X,Z (divided by 4000 and floored internally)

The result shows all mods covering that sector, sorted by priority (highest first), each with the mod name and filename.

5.5 Scan Log

Every database update is recorded in a log file:

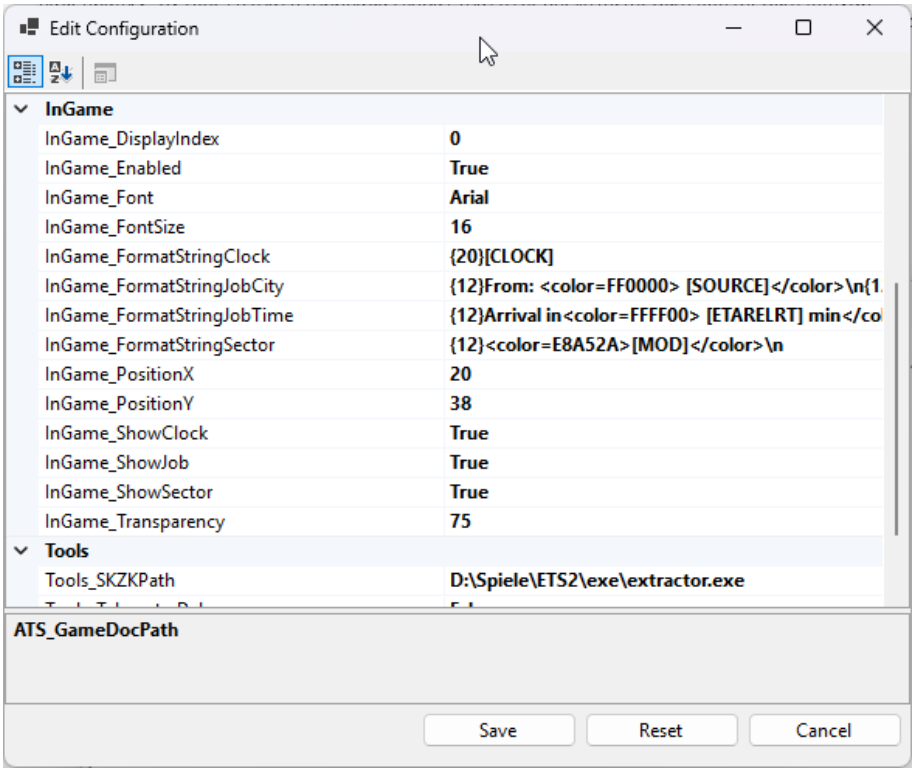
```
%LOCALAPPDATA%\MarsTheChemist\SectorHUD\SectorHUD_scan.log
```

Open the log via Database → Show Log. It contains timestamps, found mods and DLCs, the number of sectors scanned, and any errors or warnings.

6. Configuration

6.1 Configuration Editor

Open Settings → Edit Configuration. The configuration editor displays all settings in a property grid grouped by category. Click a value to edit it. Path fields offer a file or folder browser dialog. Confirm with Save or discard with Cancel. Click Apply to see the changes to the overlay parameters immediately. Click Reset to restore all settings to the auto-detected defaults (requires confirmation).



6.2 Configuration File (SectorHUD.ini)

The configuration file is located at:

```
%APPDATA%\MarsTheChemist\SectorHUD\SectorHUD.ini
```

It can also be edited directly with any text editor. Comment lines start with ; or #. Environment variables such as %TEMP% are resolved automatically. For path values, alternative paths can be listed using the pipe character | – SectorHUD uses the first path that exists.

6.3 All Configuration Parameters

Section [General]

Parameter	Default	Description
TempPath	%TEMP%	Temporary folder used by the deep-scan extractor
Autostart	False	True: the monitor starts automatically when the program launches

Section [Tools]

Parameter	Default	Description
TelemetryURL	http://localhost:25555/api/ets2/telemetry	HTTP URL of the telemetry server (identical for both games)
TelemetryPath	(auto-detected)	Full path to Ets2Telemetry.exe
TelemetryDebug	False	True: connection and error messages from the telemetry client are shown in the status bar
SKZKPath	(in program folder)	Full path to extractor.exe

Section [ETS2] / [ATS]

Parameter	Default	Description
GamePath	(auto-detected)	Game installation folder (contains base_map.scs, dlc_*.scs)
GameDocPath	(auto-detected)	Game's Documents folder (contains game.log.txt and mod/)
Map	europe / usa	Map name used when filtering sector files (europe for ETS2, usa for ATS)
MetricUnits	False / True	Use metric units for distance (km, otherwise mi)

Section [InGame]

Parameter	Default	Description
Enabled	True	False: the overlay is completely disabled (monitor keeps running, but no overlay is shown)
Font	Arial	Name of an installed Windows font
FontSize	16	Default font size in points
Transparency	75	Background transparency: 0 = fully opaque, 100 = invisible
BackgroundColor	0, 0, 0	Background color, as RGB values
CornerRadius	5	Corner shape, 0 = sharp, 1-20 = rounded
PositionX	20	X position of the overlay in pixels (from the left edge of the target monitor)
PositionY	38	Y position of the overlay in pixels (from the top edge of the target monitor)
ShowSector	True	Show the sector line (True/False)
ShowJob	True	Show job information when a job is active (True/False)
ShowJobCity	True	Show origin and destination in the overlay (True/False). Only evaluated when ShowJob=True
ShowClock	True	Show the real-time clock (True/False)
DisplayIndex	0	Target monitor index (0 = primary monitor, 1 = second monitor, etc.)
FormatStringSector	See section 6.4	Format string for the sector line
FormatStringJobCity	See section 6.4	Format string for origin/destination
FormatStringJobTime	See section 6.4	Format string for the arrival time

FormatStringClock	See section 6.4	Format string for the clock

6.4 Format Strings and Placeholders

Format strings control what the overlay displays and how it looks. They combine arbitrary text, placeholders (in square brackets), and optional control directives.

Per-line Font Size

Prefix a line with `{size}` to use a different font size for that line. Example: `{12}` renders that line at 12 points.

Colours

Colour sections of text using `<color=RRGGBB>Text</color>`, where RRGGBB is a six-digit hexadecimal colour code (e.g. `FF0000` for red, `00FF00` for green, `FFFF00` for yellow).

Line Break

Use `\n` in a format string to insert a line break in the overlay.

Placeholders

Placeholder	Description
[MOD]	Name of the highest-priority mod in the current sector
[MODS]	All mods in the current sector separated by " > " (highest priority first)
[SECTOR]	Current sector name (e.g. sec+0012-0004)
[SOURCE]	Job origin (city and company)
[DESTINATION]	Job destination (city and company)
[REMREL]	Remaining job deadline in game time (HH:MM)
[REMRELRT]	Remaining job deadline in real time (minutes)
[REMRT]	Real-time clock when the job deadline expires
[ETAREL]	Estimated arrival time from navigation in game time (HH:MM)
[ETARELRT]	Navigation ETA in real-world minutes
[ETART]	Real-time clock of the estimated navigation arrival
[DISTANCE]	Remaining route distance in km or mi
[CLOCK]	Current system time (real time)

Default Format Strings

The factory-default format strings are:

```
FormatStringSector  = {12}<color=E8A52A>[MOD]</color>\n
FormatStringJobCity = {12}From: <color=FF0000> [SOURCE]</color>\n
                      {12}To:   <color=00FF00> [DESTINATION]</color>\n
FormatStringJobTime = {12}Arrival in<color=FFFF00> [ETARELRT] min</color>
                              at<color=FFFF00> [ETART]</color>\n
FormatStringClock   = {20}[CLOCK]
```

Example: Custom Format String

To display the full sector name instead of the mod name, rendered at 14 points:

```
FormatStringSector = {14}Sector: <color=AADDFF>[SECTOR]</color>\n
```

7. Telemetry Server

SectorHUD retrieves all game data via the ETS2 Telemetry Server (Ets2Telemetry.exe). This server must be installed as a game plugin in ETS2 or ATS and exposes a JSON API at http://localhost:25555/api/ets2/telemetry.

7.1 Automatic Start

When the monitor starts, SectorHUD checks whether the telemetry server is reachable. If it is not, Ets2Telemetry.exe is started automatically (provided TelemetryPath is correctly set). SectorHUD then waits 5 seconds to give the server time to initialise.

7.2 Manual Configuration

If the telemetry server is reachable on a different port or URL, adjust the URL in the configuration:

```
TelemetryURL = http://localhost:25555/api/ets2/telemetry
```

7.3 Polling Interval

SectorHUD polls the telemetry server every 5 seconds. If no relevant values have changed (sector, origin/destination, times, clock), the overlay is not updated.

7.4 Time Scale and Real-Time Conversion

ETS2 and ATS run in an accelerated time mode. The telemetry server provides the current time scale factor (timeScale). SectorHUD calculates a rolling average of this factor (weighting: 0.5 % new value, 99.5 % existing average) and divides game times by this factor to obtain the actual real-world duration. The default starting value is 15 (typical ETS2 time scale during normal driving).

8. Troubleshooting

Problem	Possible Cause / Solution
Overlay does not appear	Check: InGame → Enabled = True. Check: PositionX and PositionY are within the visible area of the target monitor. Check: DisplayIndex matches the desired monitor.
"Waiting for game…" in overlay	The telemetry server is not reachable. Check whether Ets2Telemetry.exe is running. Verify TelemetryURL and TelemetryPath in the configuration.
No mods in the output area / overlay	The database is empty or has not been scanned yet. Run Database → Update ETS2/ATS.
Scan fails: game.log.txt not found	GameDocPath does not point to the correct Documents folder. Check and correct the path in the configuration.
Scan fails: extractor.exe not found	SKZKPath is wrong or extractor.exe is missing. Ensure extractor.exe is in the program folder or enter the path manually.
DLC file not found (scan warning)	The DLC .scs file is not present in GamePath. Check that all DLCs are installed and that GamePath points to the correct game folder.
Mod file not found (scan warning)	The mod file does not exist in the mod/ folder. The mod may have been deactivated, but game.log.txt has not yet been updated.
SectorHUD refuses to start a second time	An instance is already running. Close it first.
Configuration was not saved	You must click Save in the configuration editor. Cancel discards all changes.
Overlay text is unreadable / too small	Adjust Font, FontSize, and Transparency in the configuration.

8.1 Debug Mode

Set `TelemetryDebug = True` in the configuration to display detailed connection and error information from the telemetry client in the status bar. This helps diagnose telemetry connection issues.

8.2 Analysing the Scan Log

When a database update fails, the scan log (Database → Show Log) provides detailed information: found mods and DLCs, number of sectors scanned per mod, warnings about missing files, and extraction errors.

9. Technical Details

9.1 Sector Calculation

Game-world coordinates are converted to sector indices as follows:

```
SectorX = floor(TruckX / 4000)
SectorZ = floor(TruckZ / 4000)
```

The sector name shown in the overlay has the format:

```
sec{sign}{|SectorX| 4 digits}{sign}{|SectorZ| 4 digits}
```

Example: coordinates (48200, −16800) → SectorX = 12, SectorZ = −5 → sec+0012-0005

9.2 Mod Detection from game.log.txt

SectorHUD analyses game.log.txt using regular expressions:

- DLCs are identified by the pattern "dlc_NAME.scs mounted".
- Local mods are identified by "Active local mod FILENAME (name: MODNAME, version".
- The order in the log corresponds to the load order and therefore the priority.

9.3 Sector Extraction

extractor.exe scans SCS/ZIP files and outputs file listings. SectorHUD filters for lines that contain the map name (europe / usa), "sec", and ".base", then extracts X/Y coordinates using the pattern:

```
sec{+/-}{4 digits}{+/-}{4 digits}.base
```

If fewer than 5 lines are found during a shallow scan, SectorHUD automatically switches to a deep scan, which extracts the mod file into the temp folder and then analyses its contents.

9.4 File and Database Paths

File	Path
Configuration file (INI)	%APPDATA%\MarsTheChemist\SectorHUD\SectorHUD.ini
SQLite database	%LOCALAPPDATA%\MarsTheChemist\SectorHUD\SectorHUD.db
Scan log	%LOCALAPPDATA%\MarsTheChemist\SectorHUD\SectorHUD_scan.log
User manual (German)	<Program folder>\SectorHUD Manual DE.pdf
User manual (English)	<Program folder>\SectorHUD Manual.pdf

10. Version Information and Info Dialog

Help → Info opens a dialog showing:

- Program name and version number (Major.Minor.Build)
- Build date
- Copyright notice
- Full paths to the database and INI file
- Statistics: number of mods and sectors in the ETS2 and ATS databases