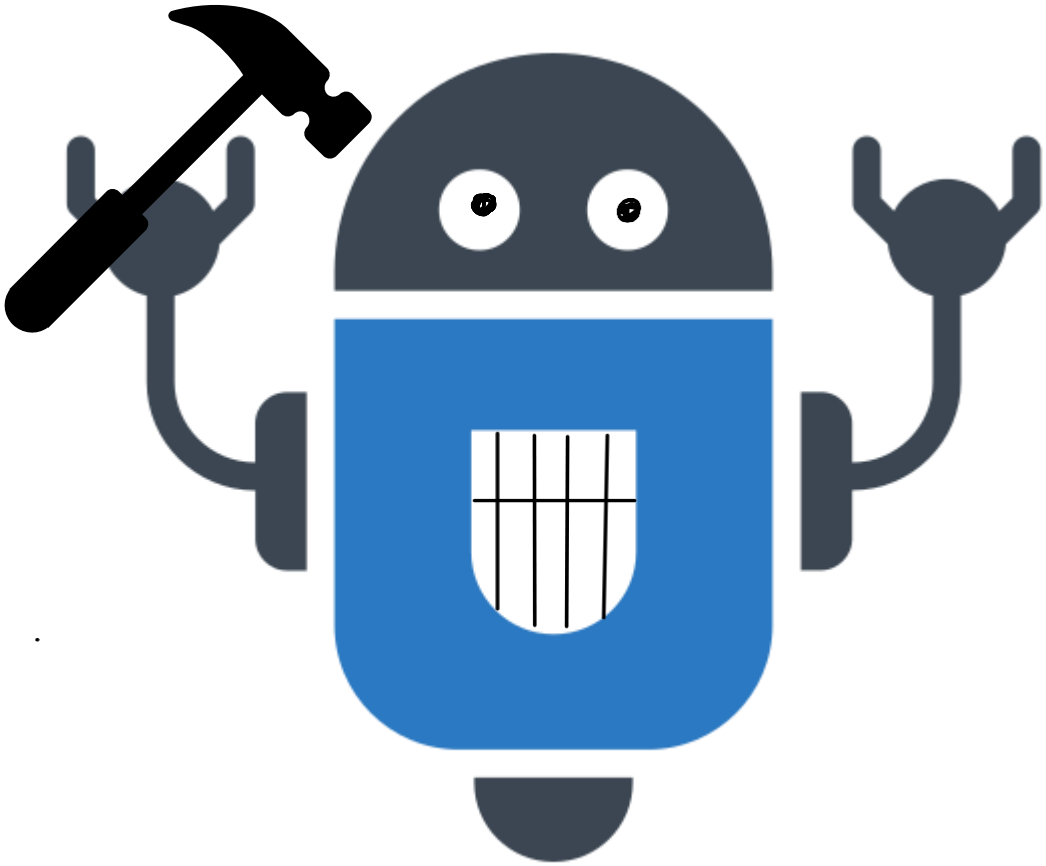
SmartReplaceTool

How to use the SRT Programme



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1 Introduction and Scope

The SmartReplaceTool (SRT) is a desktop application designed to simplify text replacement in technical documents, DeltaV FHX files, CSV spreadsheets, and Excel files.

It provides:

- A controlled replacement workflow with approval prompts
- Automatic backups and logs for traceability
- A GUI interface with quick search, reports, and customisation options
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It is particularly suited for:

- Technical documents
- DeltaV FHX configuration files
- CSV and Excel spreadsheets

Scope:

This guide explains how to install, set up, and use SRT for safe, traceable text replacement and reporting. It is intended for engineers, document controllers, and automation teams.

2 Distribution Options

There are **two ways** you can use the SmartReplaceTool (SRT). Both run the same software, but the packaging is different:

2.1 Single Executable (.exe)

- You will receive a **single file** (e.g., SmartReplaceTool.exe) which you can copy anywhere on your PC (Desktop, Documents, or any desired folder).
- This is the **simplest method** – double-click the file to run.

False-Positives
Because the .exe is built from **unsigned Python code**, some antivirus programs or even Windows Defender may flag it as suspicious.

- A **false positive** means the program is marked as a threat **even though it is safe**.
- This happens because many malware tools also use compressed Python executables, so antivirus software sometimes assumes “better safe than sorry.”

2.2 Folder Method (OneDir)

- In this method, the program comes as a **folder** containing multiple files (including an .exe inside).
- Here, the .exe **depends on the other files** in the folder.
- If you remove the .exe from the folder, it will not run.

Advantage: This method is **less likely to trigger antivirus false positives**, because the .exe is not compressed into a single file – everything is left visible.

If you've worked with **Autocon** (the DeltaV simulation tool), you know it also runs from a **folder structure**. If you pull the executable out of the Autocon folder, it won't run. The same applies here – the .exe must stay in its folder to function.

👉 **Recommendation:**

- If you just want something quick and portable → use the **single exe**.
- If your antivirus complains, or you want a safer setup → use the **folder (OneDir) method**.

3 How to Use

3.1 Main Interface Overview

When SRT launches, you will see:

Header area: Title, version, working folder, quick actions menu

Tabs: Each tab provides a specific feature

1. File Processing – Load and process documents
2. Quick Search – Search and replace within pasted text snippets
3. Replacements – Manage rules (SEARCH=REPLACE)
4. Activity Log – View, search, or clear activity history
5. Help & Guide – Quick instructions inside the app
6. User Guide (PDF) – Opens the full guide
7. Reports – View processing history and generate reports

3.2 Workflow: File Processing

This is the core feature of SRT.

1. Open File Processing tab
2. Click Browse Files and select a file (.fhx, .txt, .csv, or .xlsx)
3. Review/edit rules in Replacements tab
4. Click Process File

5. Tool scans for matches → shows summary
6. Approve replacements:
    - Approve All – apply all rules
    - Review Individually – approve/skip one by one
    - Cancel – stop processing
7. Once approved:
8. A backup is created in *Backups*
9. A modified copy is saved in *Modified_Files*
10. A summary report is generated in *Reports*
11. Optionally rename the modified file or open the containing folder

💡 Example:

If TEMP=Temperature is in your replacements.txt, then all TEMP entries in your file will be changed to Temperature.

3.2.1 Approval Flow

After scanning, SRT shows a summary of all matches

Choose:

1. Approve All (bulk replacement)
2. Review Individually (approve/skip each occurrence)
3. Cancel (stop processing)

It **always** creates a backup copy before modifications

3.3 Replacement Rules

For small edits without processing entire files:

1. Paste text into the input area
2. Enter Search Text and set Context Range (characters before/after match)
3. Click Find Matches → results appear in a table with line number + context
4. Optionally:
    - ✓ Replace All – replace all matches in pasted text
    - ✓ Clear Results – reset

3.4 Workflow: Quick Search

1. Paste text into the input area

2. Enter search text and context range
3. Click Find Matches to see occurrences
4. Optionally Replace All or clear results

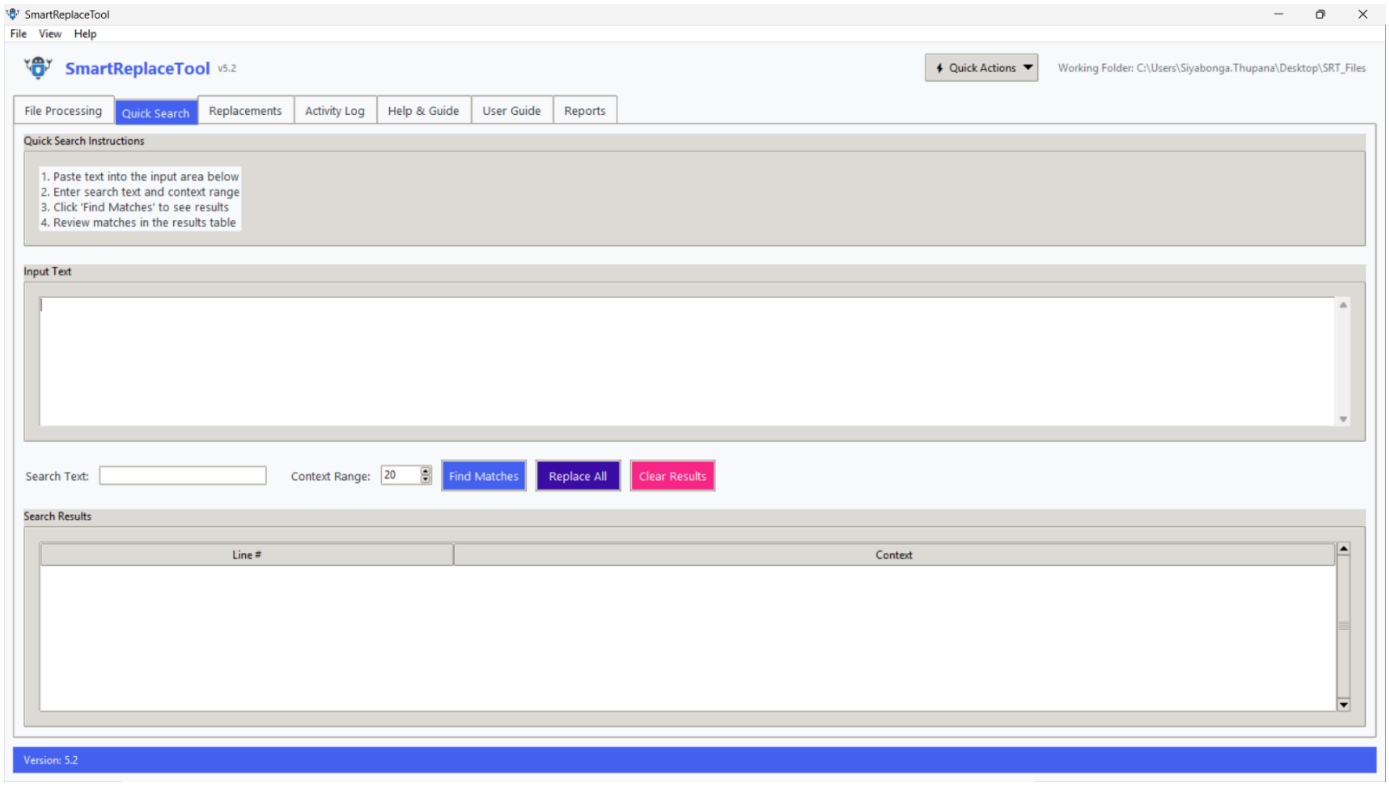

Figure 1: Figure-Name

3.5 Reports & Logging

- Each session generates a report stored in *SRT_Files/Reports*
- Types:

1. HTML – viewable in browser
2. PDF – exportable

Reports Tab allows:

- Viewing current and historical reports
- Refreshing the report list
- Opening the reports folder

3.6 Quick Actions

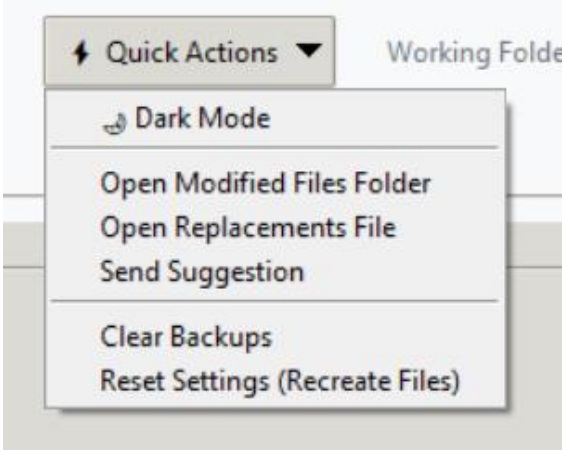

Figure 2: Figure-Name

From the top-right menu:

- Toggle Light/Dark Mode
- Open Modified Files folder
- Open replacements file in editor
- Send suggestion/feedback
- Clear backups
- Reset settings (restore sample files)

4 Disclaimer, Background & Terms of Use

The **SmartReplaceTool (SRT)** was created as a personal project to speed up repetitive replacement tasks in engineering documentation and DeltaV FHX files. It has since grown into a useful utility, offering:

- **Efficient file handling** with support for multiple formats (.fhx, .txt, .csv, .xlsx)
- **Encoding detection** (via the *chardet* library) to safely process files in various character sets
- **Structured data handling** using *pandas* and *openpyxl* for spreadsheets
- **Robust reporting** with *reportlab* and *matplotlib* for generating summaries and charts
- **Automated backups and logging** to protect original files and ensure traceability

The tool uses a combination of **pattern matching algorithms** (re regular expressions) and **context-aware previews** to help prevent blind replacements. It is designed to **assist**, not replace, human judgment.

4.1 Terms of Use / Disclaimer

- This software is provided **as-is**, without any warranty or guarantee of correctness.

- While the tool can greatly improve speed and reduce manual effort, **all outputs must be manually reviewed** before being used in production systems (e.g., DeltaV imports, project deployment, or official documentation).
- The developer (Siyabonga Thupana) personally uses SRT alongside **manual validation**, ensuring all files are tested before importing them.
- By using this software, you agree that you do so **at your own risk**. The developer is **not liable** for any errors, data corruption, downtime, or damages resulting from its use.

Inshort:
This is a **time-saving assistant** powered by modern Python libraries, not a foolproof replacement for engineering judgment. Use it to work smarter, but always verify results before relying on them.