

# BASIL - The FuSa Spice

2025 Recap - 2026 Goals

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Aerospace · Automotive · Linux Features  
OS Engineering Process · Safety Architecture · Systems · Tools  
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# What is it?

A collaborative tool for software traceability management

- Web user interface and API
- Multi user
- Granular permissions management
- Granular traceability capability (snippets)
- Embedded Test infrastructure and integration with many external ones
- Import/Export (SPDX, yaml, csv, xlsx, json, html, pdf)
- Track progress and clarifies gaps
- In-app AI suggestions
- ...
- <https://github.com/elisa-tech/BASIL> for more details

# How it looks like?

The screenshot displays the BASIL web application interface, which integrates traceability and test case management.

**Left Sidebar:**

- Home
- Traceability Scanner
- User Management
- Test Run Plugin Presets
- Settings
- SSH Keys
- User Files
- Libraries >
- Useful Links >
- Version: 1.8.6

**Central Content Area:**

**Completion: 4/4**

**.SH DESCRIPTION**

```
.The  
.BR chmod ()  
and  
.BR fchmod ()  
system calls change a file's mode bits.  
(The file mode consists of the file permission bits plus the set-user-ID,  
set-group-ID, and sticky bits.)  
These system calls differ only in how the file is specified:
```

**Completion: 4/4**

```
.IP \[bu] 3  
.BR chmod ()  
changes the mode of the file specified whose pathname is given in  
.IR pathname ,
```

**Justification 352**

ver. 2.1 new 100.0% Completion 0

High level description. That is analyzed with more details in other sections of the specifications.

**Test Case 25**

ver. 2.1 new 100.0% Completion 0

chmod01.c

LTP test case [testcases/kernel/syscalls/chmod/chmod01.c](#)

Verify that chmod(2) succeeds when used to change the mode permissions of a file or directory.

**Test Case 388**

ver. 1.2 new 100.0% Completion 0

chmod03.c



# 2025 Recap



# Q1 2025

 34 PRs | Focus: CI Testing & User Experience

## HIGHLIGHTS:

- └─ Testing Initiative: API unit testing framework (UserLogin, Documents, SwRequirements)
- └─ Auth: Password reset via email, user profiles
- └─ User Experience: simplified permissions management
- └─ Import/Export: Multi-format requirements (CSV/JSON/YAML/SPDX), SPDX Model 3
- └─ UX: Multi-browser snippet selection, test result improvements
- └─ DevOps: Docker→Podman migration, Raspberry Pi support

## KEY METRICS:

- 6 API unit test PRs
- 5 new features PRs
- 4 deployment/infra PRs

# Q2 2025

 20 PRs | Focus: API Quality, Container Optimization and Test infrastructure

## HIGHLIGHTS:

- └ Testing: Comprehensive endpoint coverage (SwRequirements, Documents, Mappings)
- └ Optimization: Container size reduction (165MB), npm vulnerabilities fixed
- └ Features: LAVA plugin, UI AutoRefresh, Email notifications
- └ Email: SMTP\_SSL support, better login feedback, template system
- └ Code Quality: Pytest coverage reporting, code decorators, version checks

## KEY METRICS:

- 8 unit test PRs (comprehensive API coverage)
- 5 feature PRs
- 165MB container (50% reduction)
- 3 security fixes

# Q3 2025

 25 PRs | Focus: PostgreSQL Migration , SPDX and AI

## HIGHLIGHTS:

- └─  PostgreSQL Migration: SQLite3→PostgreSQL (major architectural change)
- └─ Standards: SPDX 3.0.1 export/import, traceability visualization
- └─ Features: AI integration, document hierarchies
- └─ Deployment: Apache scripts, env file support, database initialization
- └─ Testing: TMT plugin fixes, E2E testing on Ubuntu
- └─ Community: Discord integration, version notifications

## KEY METRICS:

- 1 major infrastructure change (DB migration)
- 5 feature PRs
- 6 deployment/DevOps PRs
- 10+ fixes & improvements

# Q4 2025

 21 PRs | Focus: Traceability & Document Management

## HIGHLIGHTS:

- └  Traceability as Code: Configuration-driven external repo integration
- └ Documents: Hierarchical mapping, document forking, granular control
- └ Features: Traceability as Code, Export to HTML and PDF, alert endpoint, release notifications, version displays
- └ Deployment: Unified scripts, automated backups, CI improvements
- └ Bug Fixes: SPDX export, port detection, settings initialization

## KEY METRICS:

- 1 transformative feature (Traceability as Code)
- 5 bug fixes
- 3 major feature PRs
- 4 deployment improvements

# Releases

Jan V1.6.0

Mar V1.6.4

Mar V1.6.5

Aug v1.7.3

Oct V1.8.3

Oct V1.84

Nov V1.8.5

Nov v1.8.6

# Forums 2025

FOSDEM - Feb - Bruxelles - [Link](#)

Software Bill of Materials (SBOM) Track - BASIL an open source tool that supports requirements traceability with design SBOM

ELISA Workshop 1 - May - Lund - [Link](#)

KernelCI, BASIL & Testing

Open Source Summit Europe - Amsterdam - [Link](#)

Safety-critical software - BASIL - What's New, What's Next

ELISA Workshop 2 - Nov - Munich - [Link](#)

BASIL

Linux Plumbers - Dec - Tokyo - [Link](#)

Safe Systems with Linux MC - BASIL: Traceability as Code

# Support Channels

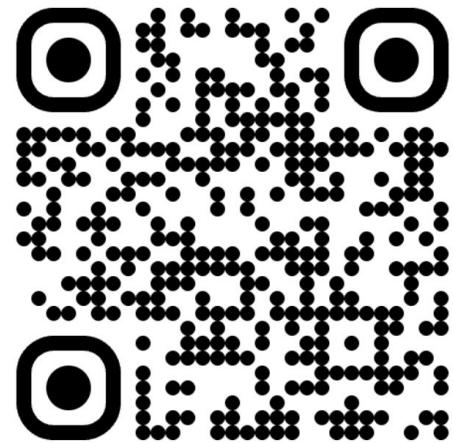
Github - <https://github.com/elisa-tech/BASIL>

ELISA Mailing List

- [tool-investigation@lists.elisa.tech](mailto:tool-investigation@lists.elisa.tech)

Discord

- Tools WG - basil
- Tools WG - general chat



discord

# Instructional Videos

Youtube Channel - <https://www.youtube.com/channel/UC8grEPwi7yqJ3iBUwXJ93-w>

- BASIL - User Files Management - Feb
- BASIL - How to Deploy on a Debian machine - March
- BASIL - tmt (Test Management Tool) - April



Youtube channel

# Synergies

InfoMagnus presented “Continuous Compliance in Safety-Critical Open Source Projects” at ELISA Workshop in Munich illustrating their work on a Continuous Compliance framework that can work in synergy with BASIL leveraging the traceability matrix export in SPDX 3 format.

<https://elisa.tech/event/elisa-workshop-munich-2025/>

# Traceability as Code

- Proposal to abstract the traceability that can be adopted to any tools
- Goal: Define a standard in traceability definitions
- Move traceability rules in a configuration file
- Scan multiple external git repositories to extract data
- Shareable configuration file generates same results
- Automatically takes into account new work items
- Recreate the traceability of a target git commit
- Not tied to a single work item format
- Can be used in CI as the feature is provided by a command line tool
- Easy to extend with custom rules
- Can be used in CI automating the generation of an SBOM

# 2026 Goals



# Seminar 2026

ELISA Seminar – From Requirements to Code: Managing End-to-End Traceability with BASIL

Wednesday, March 11, 2026, 7:00-8:00 Pacific / 14:00-15:00 UTC / 15:00-16:00 CET

<https://elisa.tech/event/elisa-seminar-from-requirements-to-code-managing-end-to-end-traceability-with-basil/>

# Roadmap

## Features

- Baseline
- Extend user files section to support nested folders
- Increase API test coverage
- Extend traceability as code to Test Runs
- Extend traceability to link Test Cases to Documents
- Support for git hooks



# BASIL - ELISA Instance

# BASIL - ELISA online public instance

The screenshot shows the BASIL online public instance interface. The left sidebar contains navigation links: Home, Traceability Scanner, User Management, Test Run Plugin Presets, Settings, SSH Keys, User Files, Libraries, and Useful Links. The Libraries and Useful Links items have dropdown arrows. The sidebar also indicates Version: 1.8.6. The main content area has a header with a welcome message, a search bar, and tabs for experimentation, syscalls (which is selected), and test. Below this is a table titled "API Listing for syscalls" with a coverage of 2.7%. The table includes columns for ID, API, Version, Owner, Category, Last Completion, Notifications, and Actions. The data in the table is as follows:

ID	API	Version	Owner	Category	Last Completion	Notifications	Actions
3	accept	1e2d36deb2deldbaf7...	lpellicc	██████	0000	██████	⋮
4	accept4	1e2d36deb2deldbaf7...	lpellicc	0000	0000	0000	⋮
5	access	1e2d36deb2deldbaf7...	lpellicc	0000	0000	0000	⋮
6	acct	1e2d36deb2deldbaf7...	lpellicc	██████	0000	██████	⋮
7	add_key	1e2d36deb2deldbaf7...	lpellicc	0000	0000	0000	⋮
8	adjtimex	1e2d36deb2deldbaf7...	lpellicc	0000	0000	0000	⋮
9	afs_syscall	1e2d36deb2deldbaf7...	lpellicc	0000	0000	0000	⋮
10	alarm	1e2d36deb2deldbaf7...	lpellicc	██████	0000	██████	⋮
11	arch_prctl	1e2d36deb2deldbaf7...	lpellicc	0000	0000	0000	⋮
12	bind	1e2d36deb2deldbaf7...	lpellicc	██████	0000	██████	⋮

# BASIL - ELISA online public instance



<http://elisa-builder-00.iol.unh.edu:9056/>

# Thanks

