BASIL - The FuSa Spice

2025 Recap - 2026 Goals

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ELISA
Enabling Linux in Safety Applications

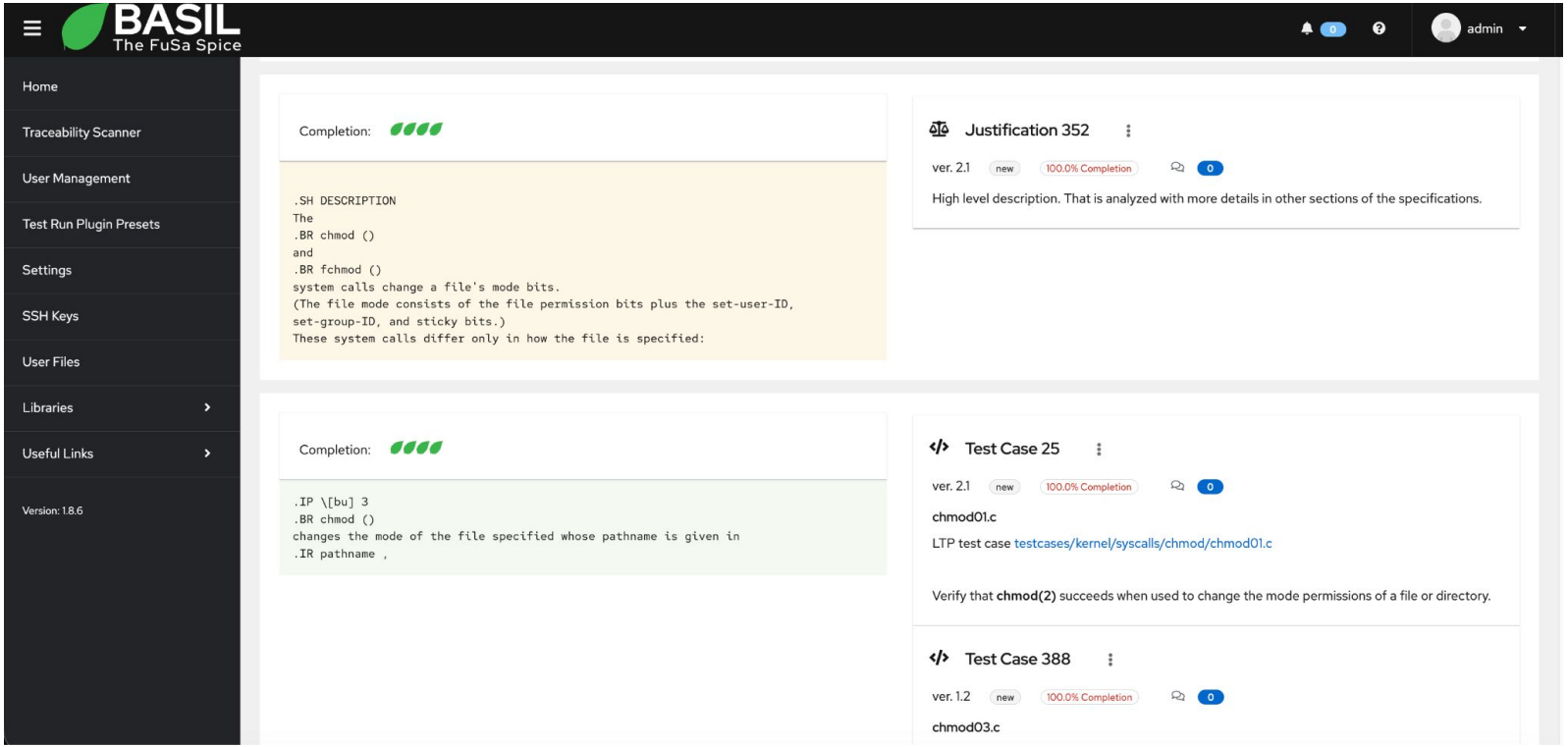
Aerospace · Automotive · Linux Features
OS Engineering Process · Safety Architecture · Systems · Tools
Lighthouse · Space Grade Linux

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?



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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
- 4 deployment/infra PRs
- 5 new features 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)
- 165MB container (50% reduction)
- 5 feature PRs
- 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)
- 3 major feature PRs
- 5 bug fixes
- 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

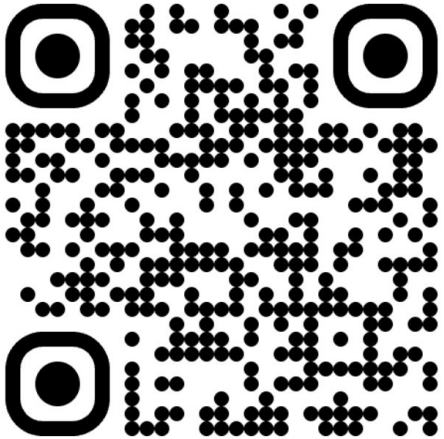
Github - https://github.com/elisa-tech/BASIL

ELISA Mailing List

- tool-investigation@lists.elisa.tech

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

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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/

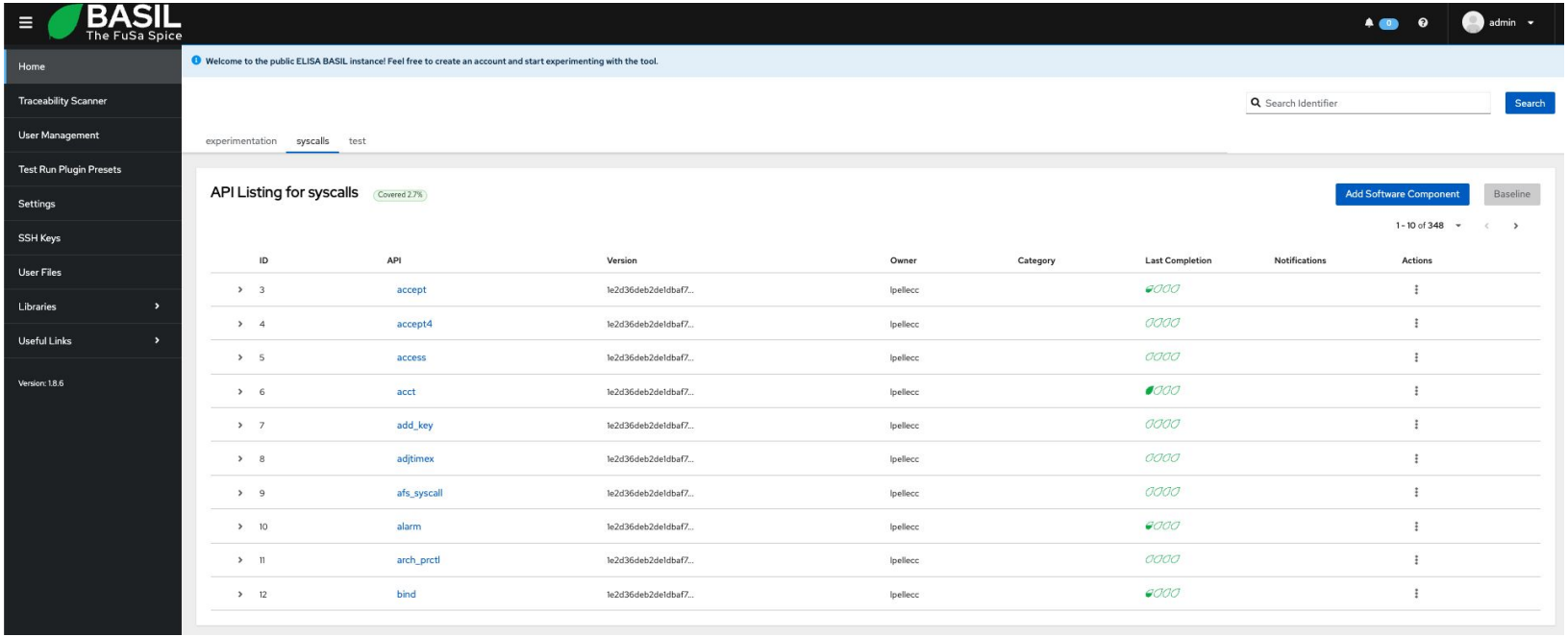
Roadmap

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



BASIL - ELISA online public instance

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

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Thanks