

# FLYNC

Accelerator for SDV network configuration

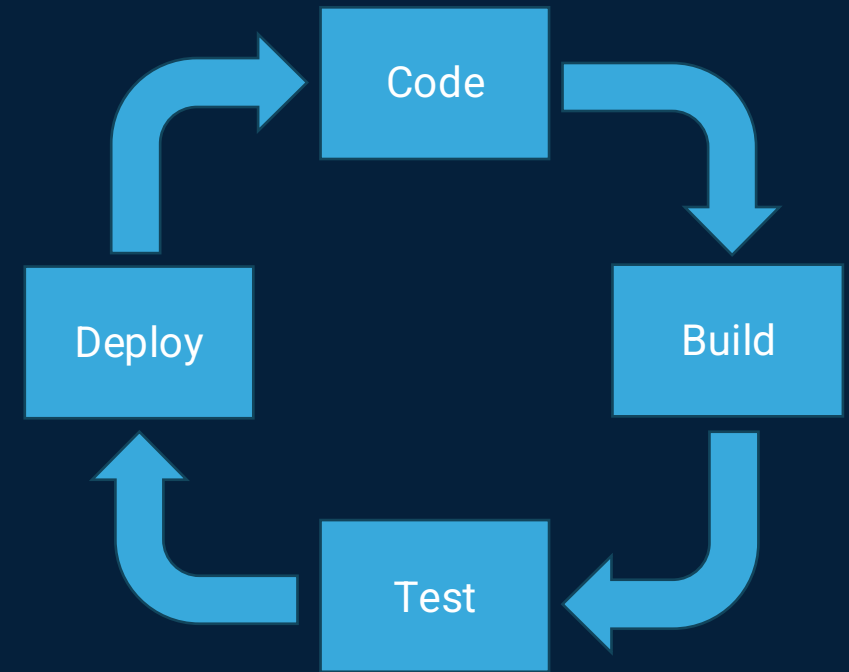
**#ONESTEPAHEAD**



# MOTIVATION

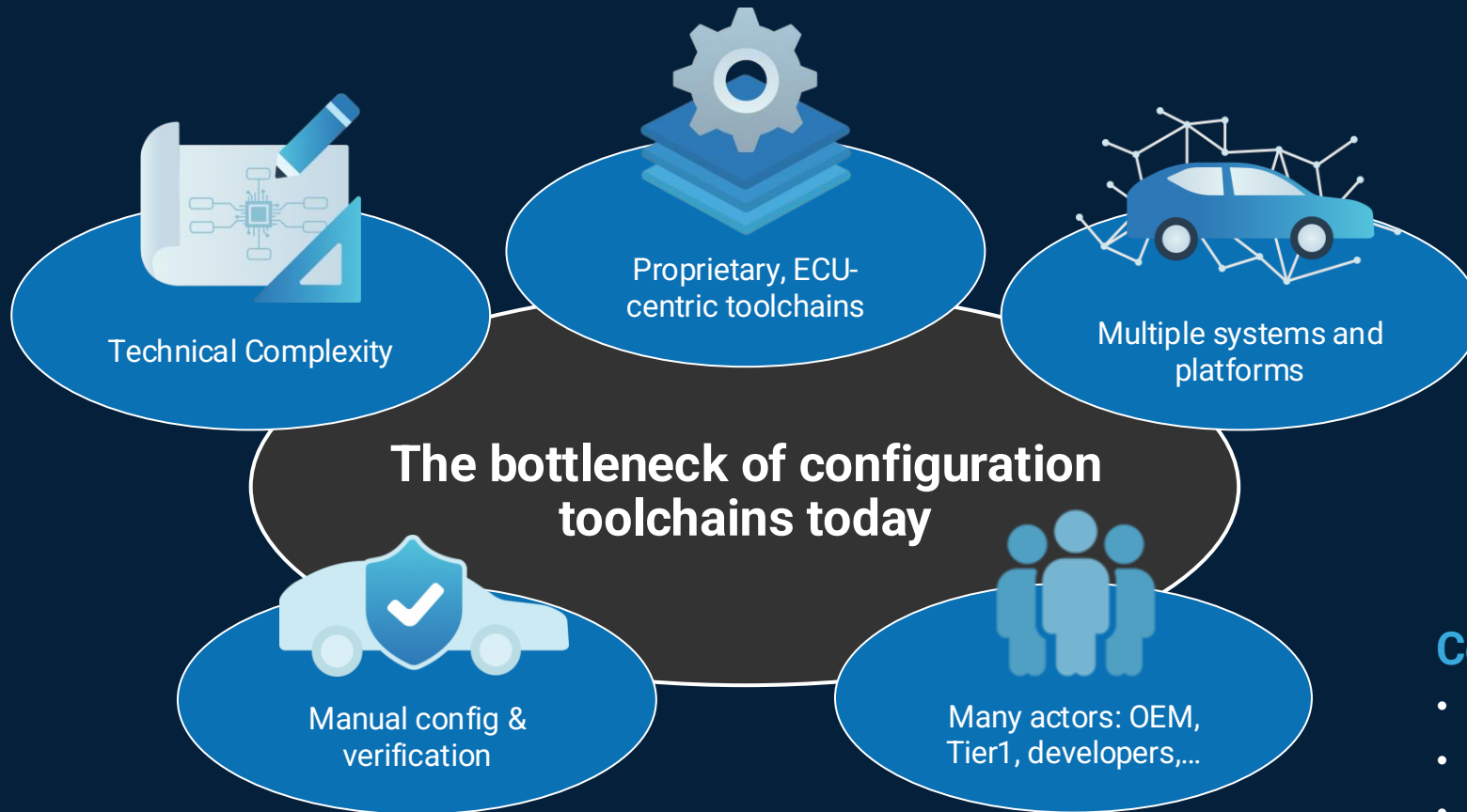
## SOFTWARE-DEFINED VEHICLES (SDV)

- Automotive innovations are based on Software.
  - Software is foundation for successful vehicle offerings.
  - Fast software development cycles are essential.
- But why are some OEMs picking up speed while others seem to slow down?
- Why does everything seem to slow down when communication configs need changes?



# MOTIVATION

## WHAT HOLDS US BACK?

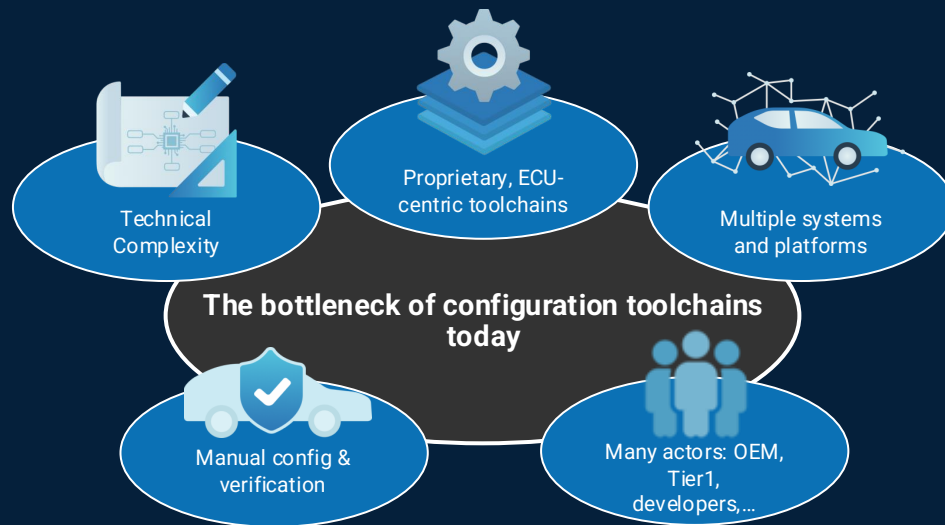


### Consequences

- Time consuming with manual steps
- Costly proprietary solutions
- Poor automation and no systematic reuse
- Complex maintenance and compatibility

# MOTIVATION

## WHAT DO WE WANT?



- **Faster than current solutions**  
Aiming to reach “China's development pace”
- **Automated and CI/CD friendly**  
No manual configuration steps
- **Modern, config-as-code**  
Versioned, reviewable, and declarative
- **Single source of truth**  
One format, one model for everything
- **Open-source & license-free**  
No vendor lock-in, open collaborative ecosystem

# MOTIVATION

## WHAT IS AVAILABLE TODAY?

	DBC	LDF	FIBEX	ARXML	Franca IDL	YANG models
CAN support	Yes		Yes	Yes		
LIN support		Yes	Yes	Yes		
Automotive Ethernet support			Yes	Yes	Partial	Partial
SOME/IP support			Yes	Yes	Yes	
(PDU) Gatewaying support			Partial	Yes		
Automotive Software support			Partial	Yes	Partial	A bit?
Diagnostics support				Yes		
Specification	Vendor	ISO	ASAM	AUTOSAR	COVESA	IETF, ...
Active Development	Yes?	Yes	No	Yes	No?	Yes
Config-as-code compatible	Medium	High	No	No	High	High
Open-source compatible	Yes	(Yes)	(Yes)	No	Yes	Yes

→ These solutions come with limitations and/or gaps!

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# #2 | FLYNC: ACCELERATOR FOR SDV SOLUTION



4.3.8 / 333.4.5  
SENSOR

SDP.E.BEV

SD 23°--'12.2"  
TT 23°--'54.4"  
WQ-3 N...

**technica**  
engineering

Member of KPIT Group

AUTONOMOUS

SAFE  
1G-2

SENSOR  
ACTIVE

INT\*3

7A

# FLYNC

## OPEN-SOURCE PLATFORM FOR SDV CONFIGURATION

flync

### Fast authoring

- YAML config format.
- pydantic base model schema.
- Large-scale configuration parsing.
- Human- and machine-readable.

### Configuration-as-Code

- Git-based version control.
- CI/CD pipeline integration.
- Traceability and reproducibility.

### Tailored for Automotive

- Support for automotive protocols/buses: Ethernet, CAN, LIN, SOME/IP, etc.
- Support for important technologies: MACsec, QoS/TSN, gPTP, etc.
- More on the roadmap.

### Layered Validation

- pydantic modelling & validation.
- Syntax and semantics.
- Field/Device/System level validation.

### Open & Open-source

- Community contributions.
- Ecosystem integrations.
- Extensible for emerging automotive needs.
- HW/SW-independent.

### Single Source of Truth

- System Level Definition.
- Cross-team collaboration: design, development, testing, etc.

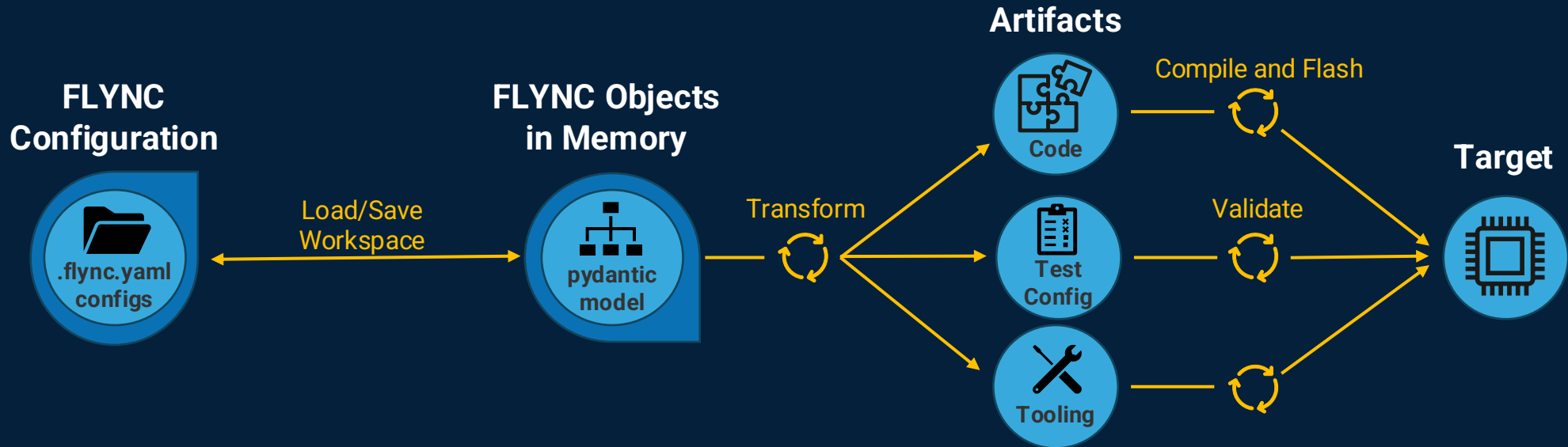
# FLYNC

## BENEFITS

- What FLYNC is not:
  - Not just a meta model or format (like YANG, JSON, YAML, or TOML).
  - Not just a combination of different, independent models.
  - Not geared towards a single stack or implementation.
- The FLYNC library provides a rich ecosystem:
  - Configuration meta-model library with extensive validation logic.
  - Cohesive models optimized for automotive usage.
  - SDK for configuration loading and validation.
  - Command-Line Interface (CLI) and format converters.

# FLYNC

## VISION: CONFIGURATION TOOLCHAIN/ECOSYSTEM



- Applications, SOME/IP Services
- openBSW
- Switch Software Stack
- Linux (ptp4l, networkd-system, iptables, )
- Simulations
- and others



- ARXML converter (no open-source due to license)
- FIBEX, DBC converter
- Language Server
- Model visualizers
- Wireshark configurations
- ...

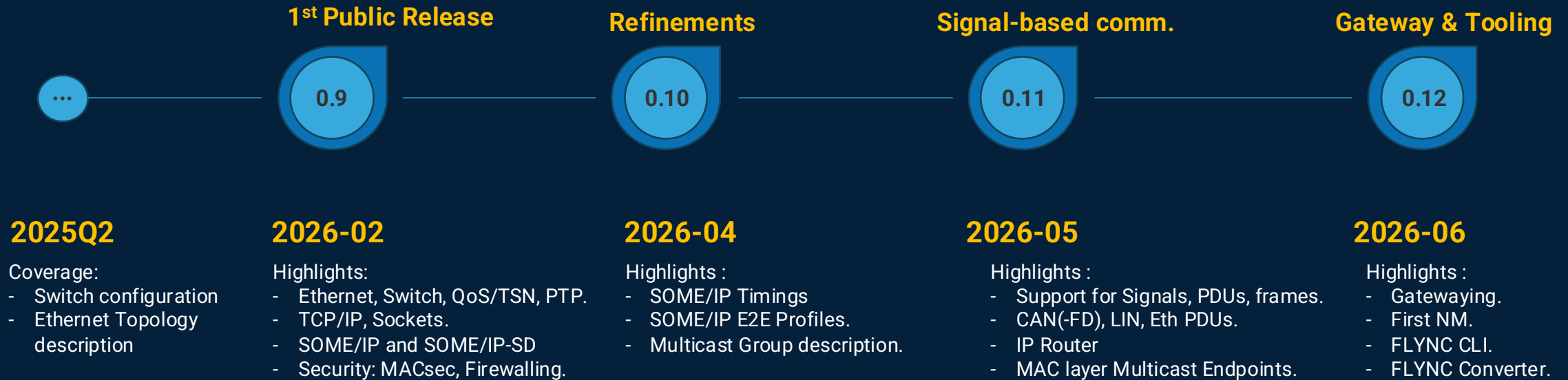
# #3

## FLYNC: ACCELERATOR FOR SDV FLYNC DEVELOPMENT

```
(groupsalloc);  
EXPORTSYMBOL(groupsalloc);  
void groups_free(struct group_info *group_info)  
{  
void groups_free(struct group_info *group_info)  
{  
    if (groupinfo->blocks[0] != group_info->small_block) {  
        int i;  
        if (groupinfo->blocks[0] != group_info->small_block) {  
            for (i = 0; i < group_info->nblocks; i++)  
                int i;  
                for (i = 0; i < group_info->nblocks; i++)  
                    for (i = 0; i < (unsigned long)groupinfo->blocks[i]);  
                    for (i = 0; i < group_info->nblocks; i++)  
                        freepage((unsigned long)groupinfo->blocks[i]);  
                        kfree(groupinfo);  
                    }  
                    kfree(groupinfo);  
                }  
                EXPORTSYMBOL(groupsfree);  
                EXPORTSYMBOL(groupsfree);  
                /* export the groupinfo to a user-space array */  
                int *grouplist,  
                /* export the groupinfo to a user-space array */  
                const struct group_info *group_info)  
                static int groups_touser(gid_t_user *grouplist,  
                {  
                    const struct group_info *group_info)  
                int i;  
                unsigned int count = groupinfo->ngroups;  
                int i;  
                unsigned int count = groupinfo->ngroups;  
                for (i = 0; i < group_info->nblocks; i++) {
```

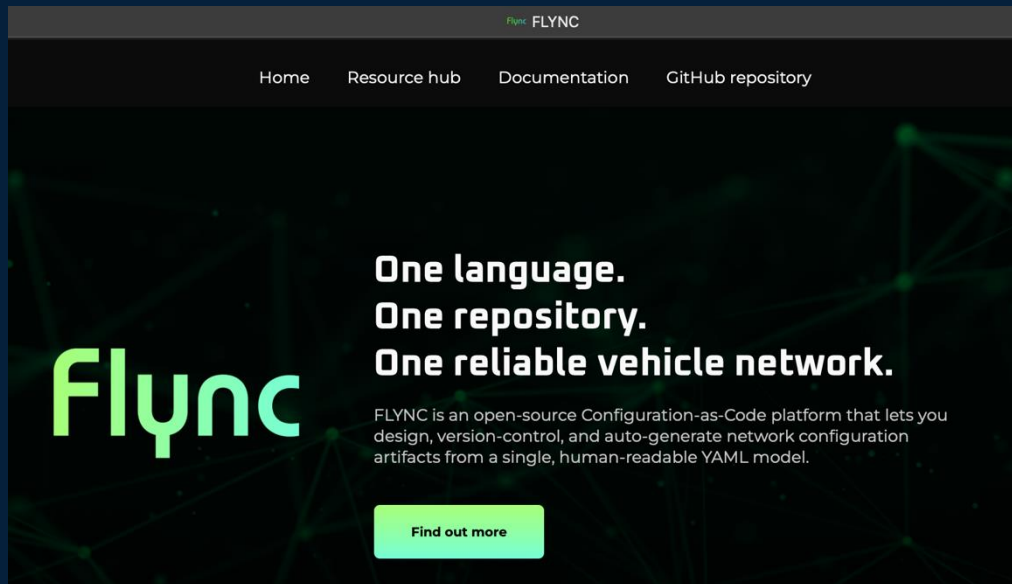
# FLYNC DEVELOPMENT

## FLYNC RELEASE HISTORY



# FLYNC DEVELOPMENT

## WHERE DO YOU GET FLYNC?



The screenshot shows the FLYNC website with a dark theme and green accents. The main content area features the FLYNC logo in large green letters, followed by the tagline "One language. One repository. One reliable vehicle network." and a brief description of the platform. A "Find out more" button is located at the bottom of the main content area.

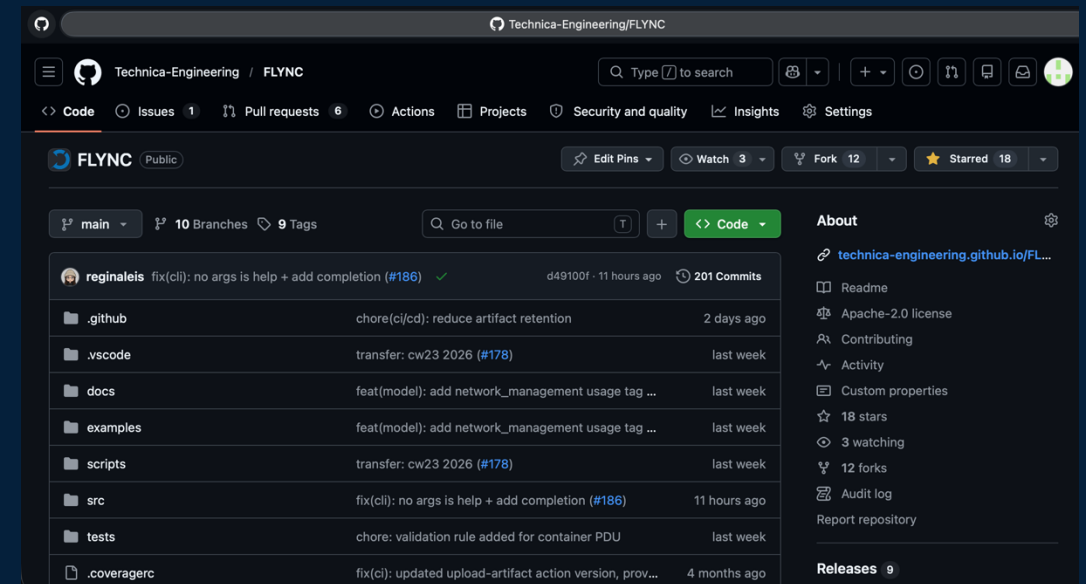
FLYNC

One language.  
One repository.  
One reliable vehicle network.

FLYNC is an open-source Configuration-as-Code platform that lets you design, version-control, and auto-generate network configuration artifacts from a single, human-readable YAML model.

[Find out more](#)

<https://www.flync-language.com>



The screenshot shows the GitHub repository page for Technica-Engineering/FLYNC. The repository is public and has 10 branches and 9 tags. The main branch is 'main'. The repository has 201 commits, 18 stars, 3 watchers, 12 forks, and 9 releases. The repository is licensed under Apache-2.0. The repository is a member of the Technica Engineering GitHub organization.

Technica-Engineering / FLYNC

Code Issues 1 Pull requests 6 Actions Projects Security and quality Insights Settings

FLYNC Public

main 10 Branches 9 Tags

reginaleis fix(cli): no args is help + add completion (#186) ✓ d49100f · 11 hours ago 201 Commits

File	Commit	Time
.github	chore(ci/cd): reduce artifact retention	2 days ago
.vscode	transfer: cw23 2026 (#178)	last week
docs	feat(model): add network_management usage tag ...	last week
examples	feat(model): add network_management usage tag ...	last week
scripts	transfer: cw23 2026 (#178)	last week
src	fix(cli): no args is help + add completion (#186)	11 hours ago
tests	chore: validation rule added for container PDU	last week
.coveragerc	fix(ci): updated upload-artifact action version, prov...	4 months ago

About

- technica-engineering.github.io/FL...
- Readme
- Apache-2.0 license
- Contributing
- Activity
- Custom properties
- 18 stars
- 3 watching
- 12 forks
- Audit log
- Report repository

Releases 9

<https://github.com/Technica-Engineering/FLYNC>

# FLYNC DEVELOPMENT

IN THE PIPELINE...



- **Soon:**

- Security Features (ACLs, etc.)
- More NM and State Management
- Applications
- I/O Hardware
- Measurement and Testing

- **A bit later:**

- Diagnostics
- Timesync over CAN
- FlexRay
- J1939
- ...

# FLYNC DEVELOPMENT

THE NEXT CHAPTER OF FLYNC.

## A NEW CHAPTER

From open source roots to an open, scalable and future-ready environment



- FLYNC development is evolving and with partners joining, it is time for FLYNC to get a bigger “home”.
- Vector Informatik and Technica Engineering are working on moving FLYNC to a new Open-Source project.
- Stay tuned!

# #4 | FLYNC: ACCELERATOR FOR SDV CONTACT



Member of KPIT Group

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