

Hyperpilot^ and New Eagle: An AI Augmented Workflow

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new eagle



RAPTOR®
INNOVATION
SUMMIT 2025

Agenda

new eagle

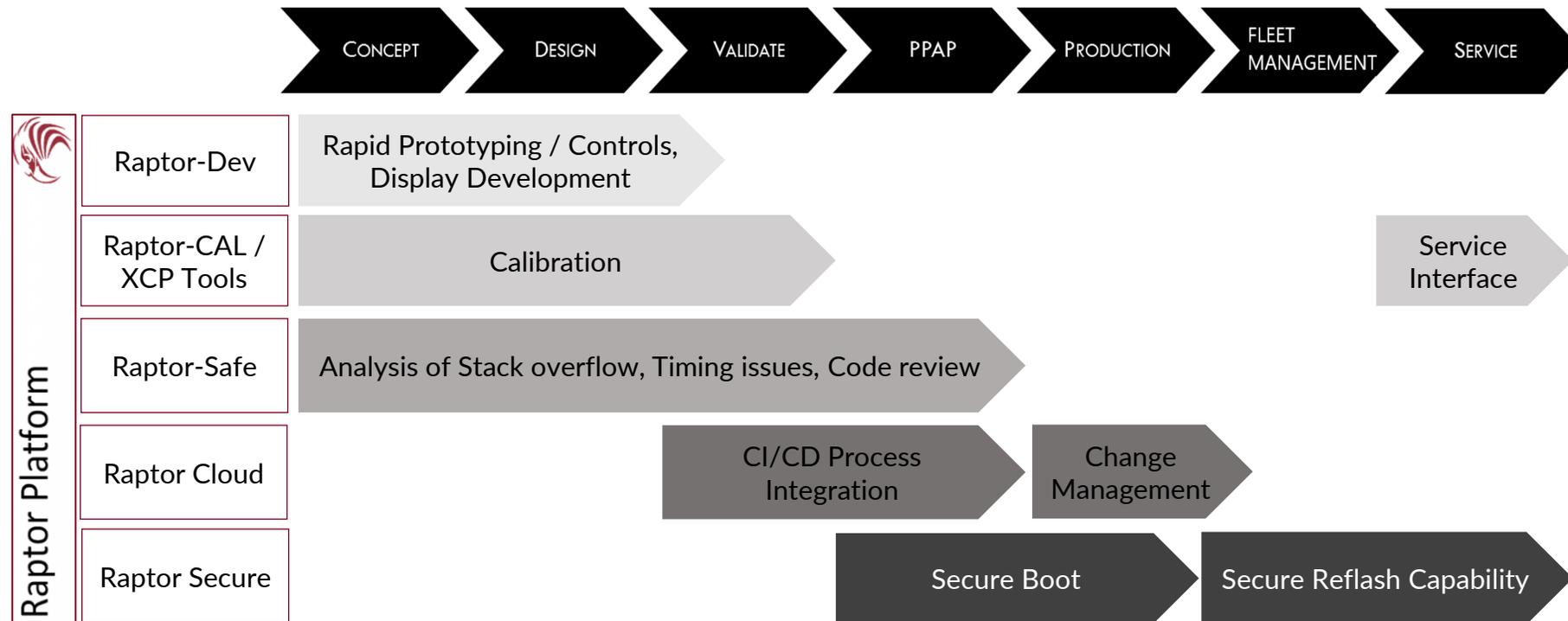


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- Controls Development Workflow
- Hyperpilot^: using Systems Engineer^ and QA Engineer^
- An Augmented Workflow
- Why does it matter?
- Future of Hyperpilot^ - Autopilot
- Integration With Your Toolchain
- Wrap Up and Q&A

The 5 integrated modules in the Raptor Production Tool suite facilitate seamless transition across all development lifecycles

Raptor Tools support the full process



Raptor Platform was designed to be your end-to-end solution for controls development



Development with Raptor: Already Speeds Up Development

9-month typical reduction in time from development to production of an electrification platform.

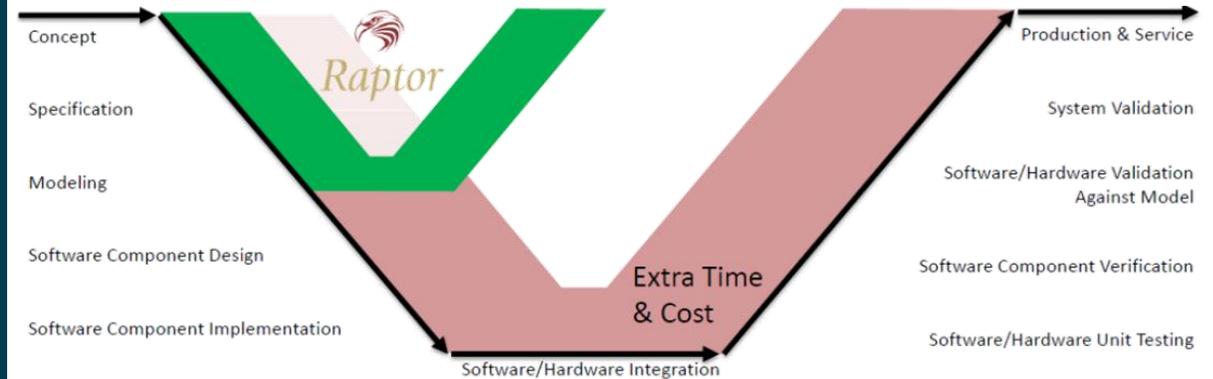
“Raptor provides a 10:1 reduction in controls staff” – Former Chief Engineer @ Trucking Tier 1

Customer Case Study:

October 2020: Began developing an electric 3-wheel last mile-delivery vehicle via a New Eagle Phase 1 project.

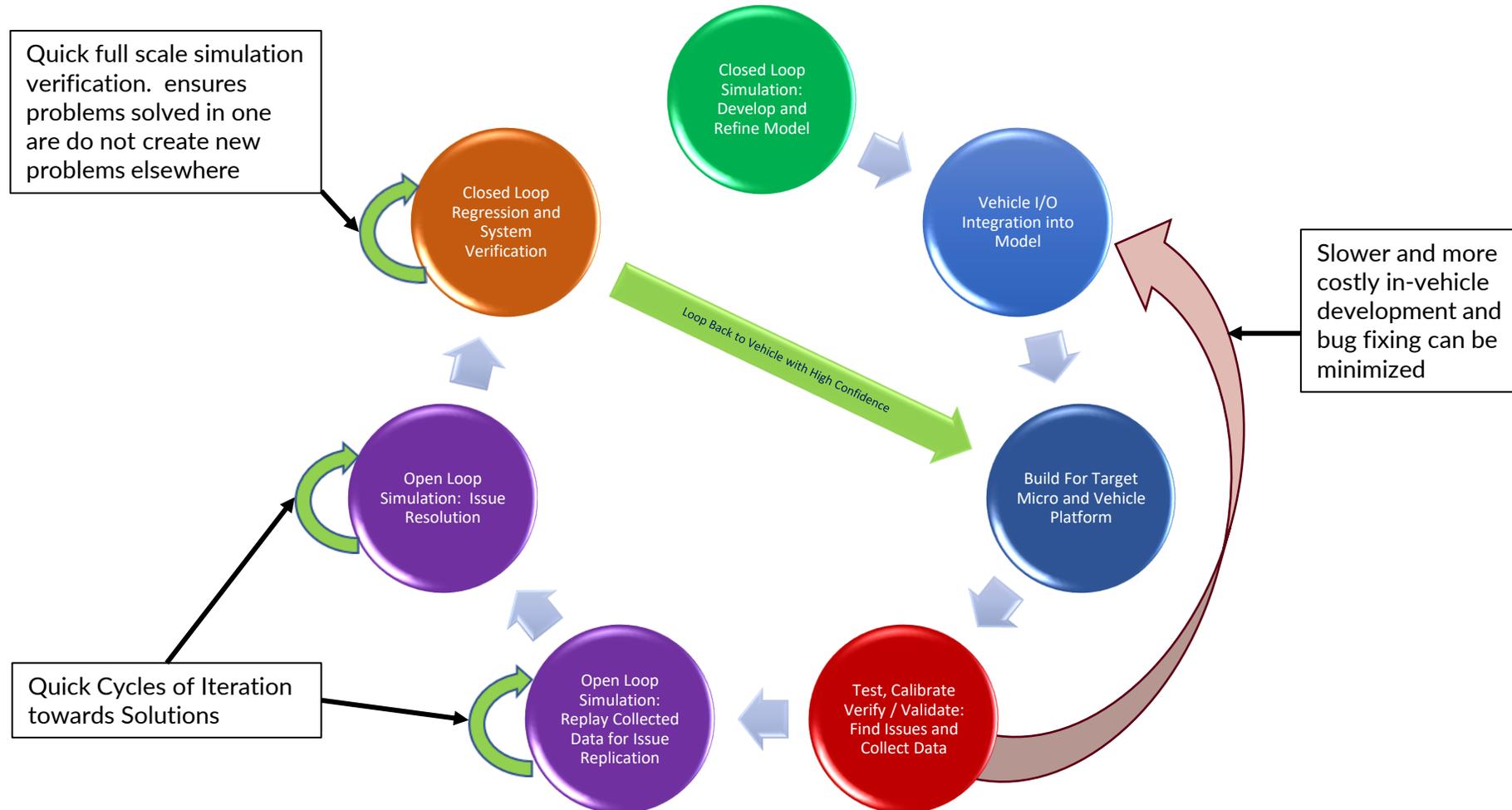
February 2021: New Eagle and the customer start a Phase 2 project where they build their first prototype using a Raptor ECU and New Eagle’s EV Supervisor Application Model.

May 2021: Customer starts production with 40 vehicles.

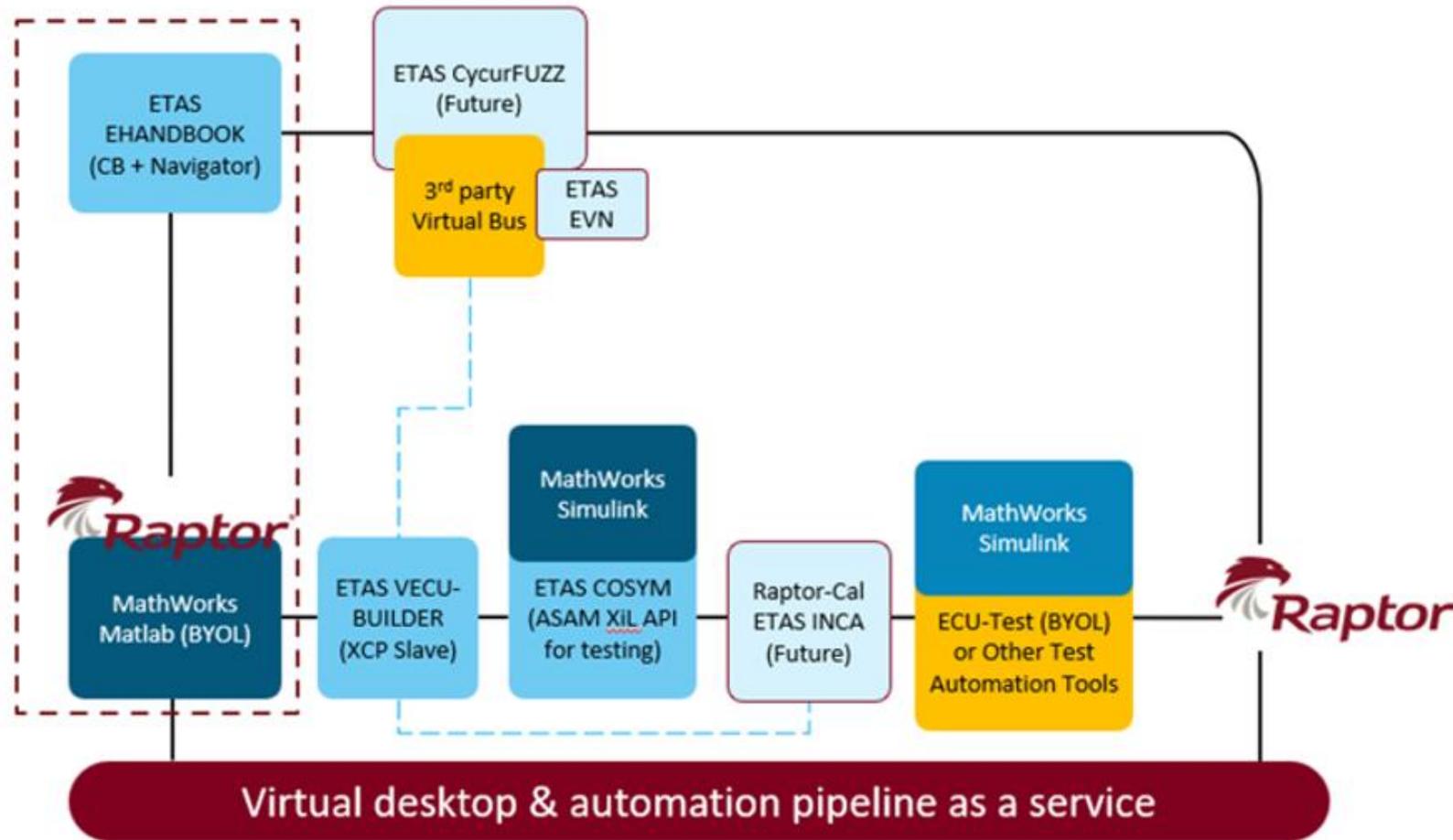




Controls Development Workflow: Focus On Simulation



Raptor Cloud





Taking an embedded system to production requires strong supply, iteration with testing and support for FuSa and Cyber standards

ECU Supply Chain

- Strong supply chain ensures products where you need them, when you need them
- Robust manufacturing ensure high quality products and reliability
- Variety of ECUs enables multiple products on core designs

SW Testing and Validation

- Testing enables highest software quality, minimal failures
- Process should accelerate development and reduces overall costs
- Leverage state of the art tools

Functional Safety and Cybersecurity Standards

- Tools and processes that maximize value and minimize burden
- Provide scalability for compliance at all levels
- Streamlined certification, easier market access

Raptor x Hyperpilot

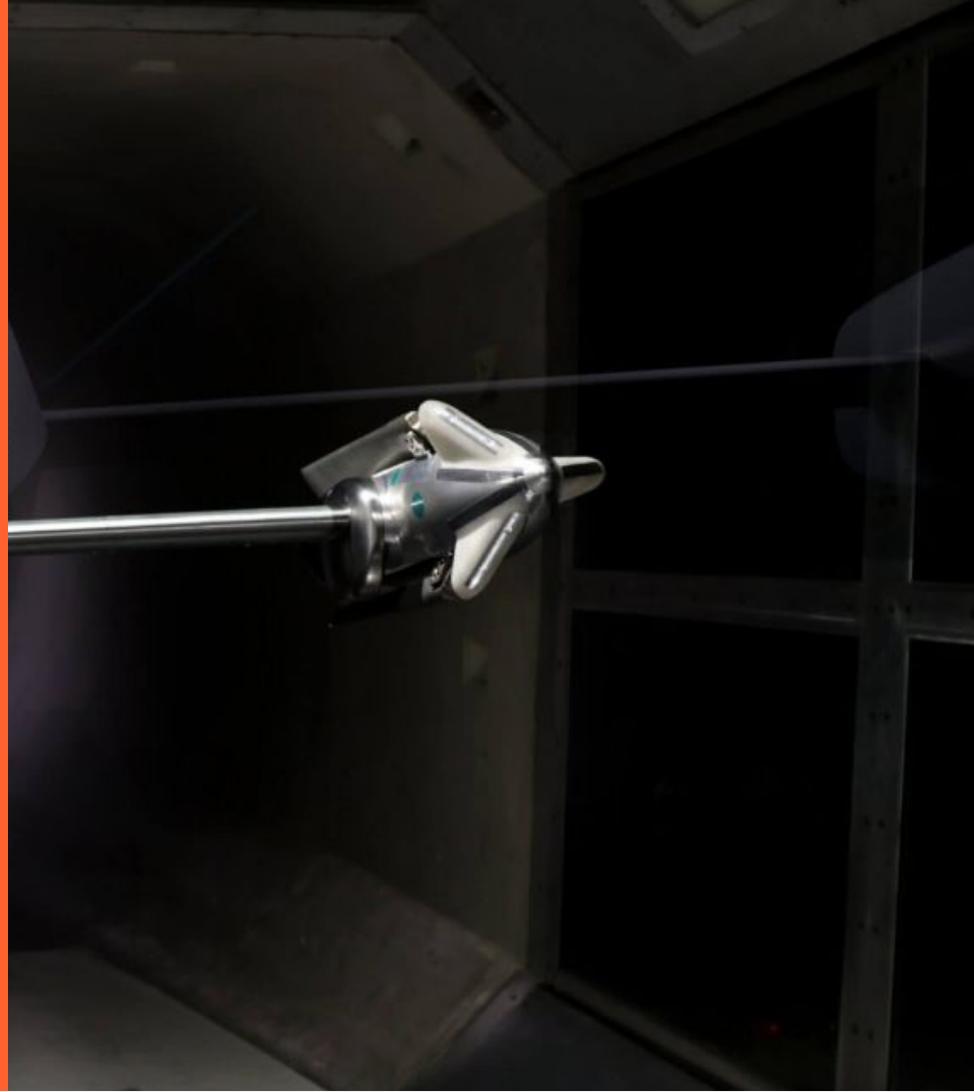
A milestone in
control software
engineering



Hyperpilot^

Engineering Potential Unlocked

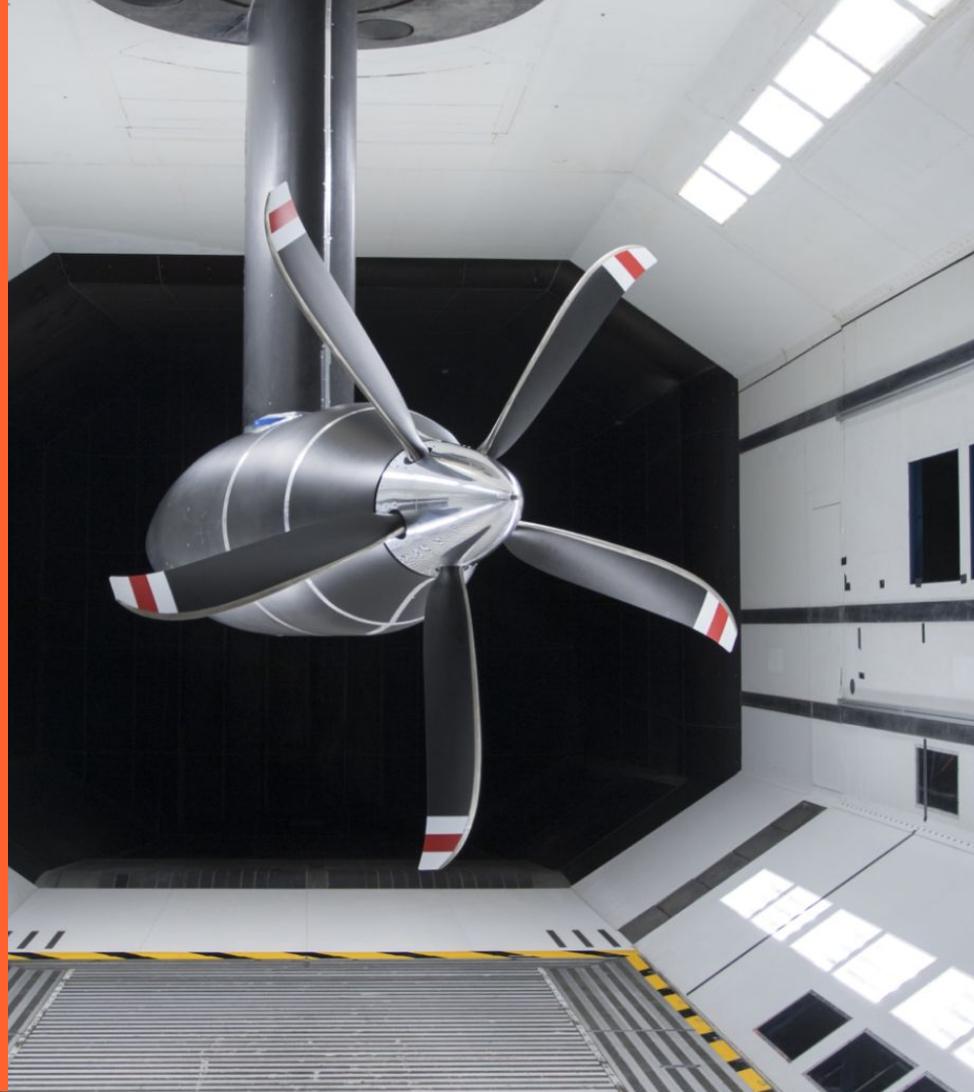
About us^



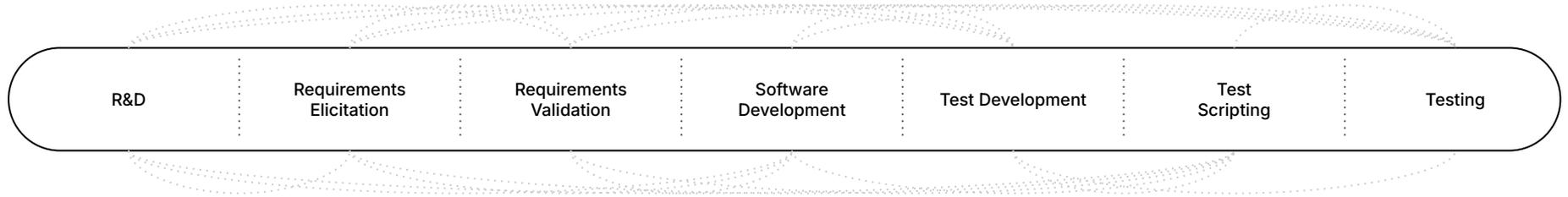
We're building a suite of Artificial Engineers that enables control software development to be **scaled exponentially.**

1. Coders → Architects.
2. 100% automation is everything.
3. This has to be for everyone.

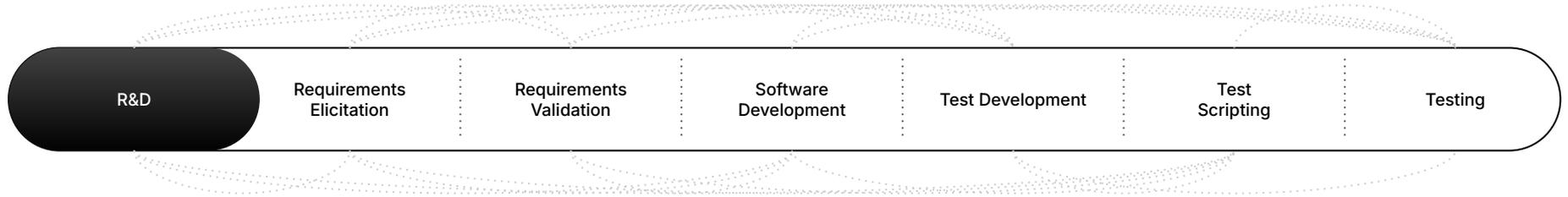
Boosting productivity
with Copilots[^]



Software development is a labour-intensive process.



Software development is a labour-intensive process.



^ When we have the time, R&D is where human engineers deliver the most value.

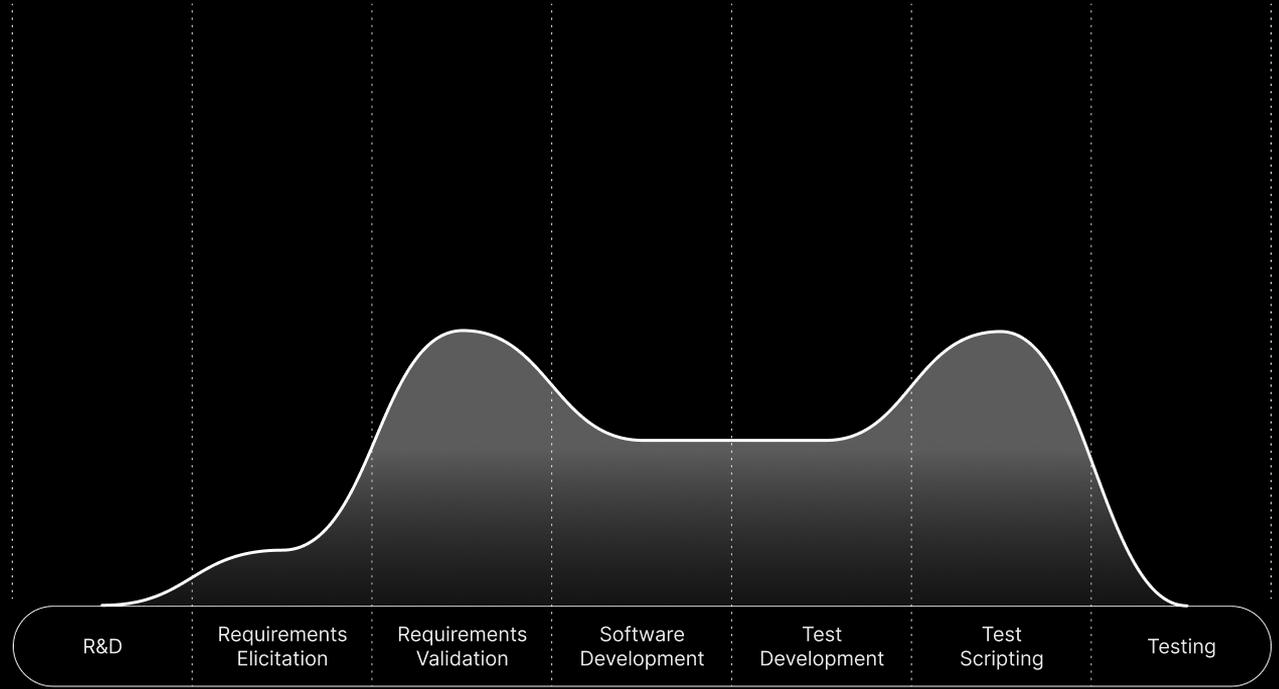
Copilots ^

AI is already changing levels of automation

● LLM chat-based tech

Hyperpilot ^

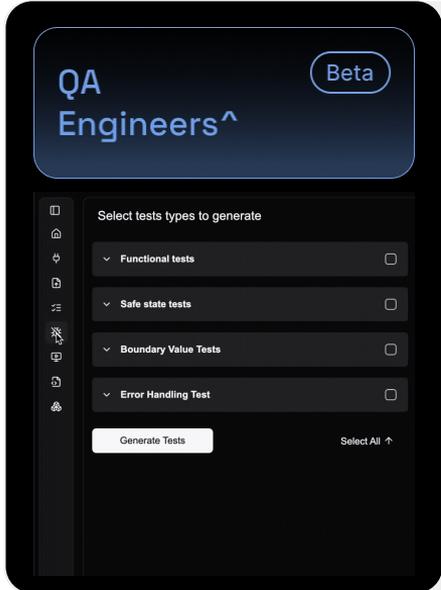
% Level of AI Automation



Our Copilots

Copilots

Interfaces leveraging LLMs, **specifically designed for controls engineering**, go beyond prompting chatbots, and drastically improve engineering workflows.



FEATURES

- Designs tests from requirements, and uses industry-standard processes
- Automates every step, from writing test code to building executable test suites.
- Uses the very same data, and even physical rigs/benches, your engineers work with every day.

BENEFITS

- Level-up: any engineer can now create tests. No need to know how to code.
- Get to market faster, at a lower cost and with higher quality software.
- Instantly adopted, zero integration overhead.



FEATURES

- Generates requirements, traceability, and product structure from your code
- Analyses your requirements for errors, missing data, and proposes corrections
- Enables companies of any size to create industry-grade documentation.

BENEFITS

- Iterate faster, get to market sooner, and with higher quality.
- Enables smaller, less established players to compete with anyone.
- Engineers can focus on innovating more, creating a more saleable product

Copilots ^

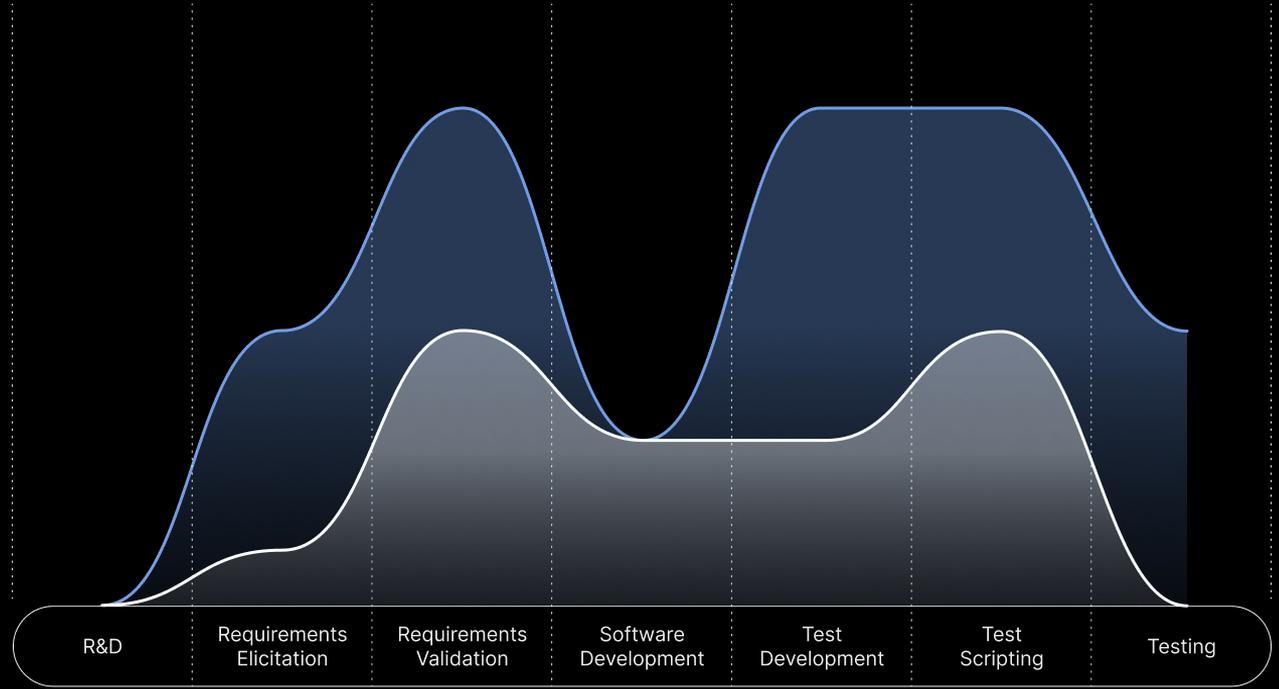
Our purpose-built copilots take automation further.

● Our Copilots

● LLM chat-based tech

Hyperpilot ^

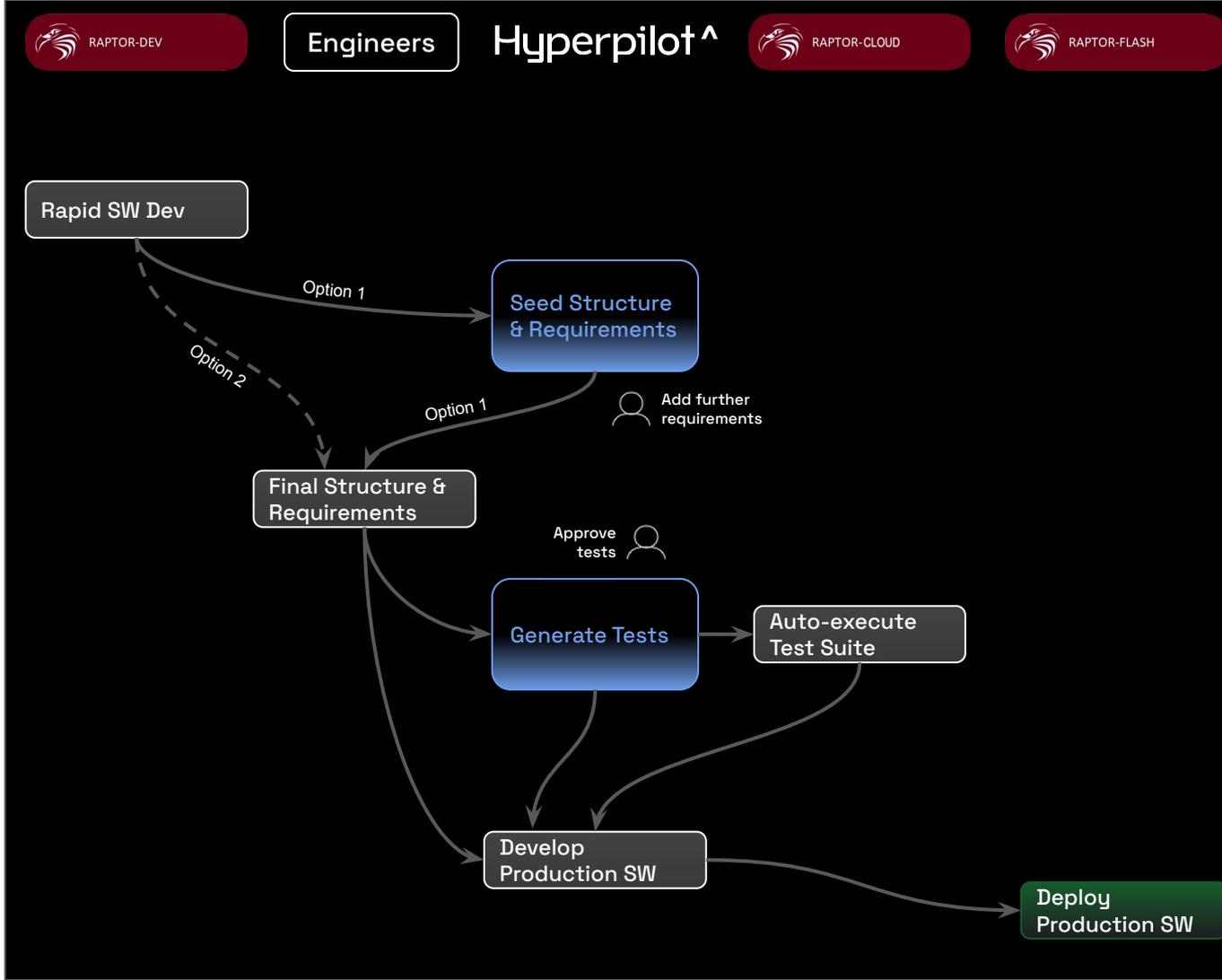
% Level of AI Automation



Where do Copilots^ fit in with Raptor?

Raptor & Copilots^

- Raptor-Dev accelerates your delivery of early-phase software
- Seed your requirements using Hyperpilot^, then furnish with your production requirements.
- Use Hyperpilot^ to 30x your test development (MiL, SiL, and HiL), executed on Raptor-Cloud.
- Use Raptor to Maintain SW beyond Production.



Case Studies ^



Case Study - Requirement Generation

Target: determine the productivity boost Hyperpilot^ provides when generating requirements based on existing SW.

- The trial would use real-world data from a legacy project, provided by New Eagle: a Motor Control Unit. The overall system is comprised of 20 complex subsystems.
- Requirements for each of these subsystems were previously created by a team of Systems engineers, using an AI Copilot driven by Gemini. The amount of resource required was recorded by New Eagle.
- One example subsystem was selected for the pilot, and a single engineer was given the task to generate requirements for it with the assistance of Hyperpilot^. It took 15 minutes to generate them, and an hour to review.

	Test Dev Time (weeks)	Headcount	Man-hours (extrapolated)	
● Systems Engineers	4	2	>400	
● Engineer + Hyperpilot^	0.5	1	<20	...20x reduction

Upload new project file

File Name	Status
BattTempController_forReverseEngineering.zip	🟢 ready
Corvette_DriveInverter_Build_3_raptor_rt_w_4.zip	🟢 ready
Corvette_DriveInverter_Build_2.mdl.zip	🟢 ready
Corvette_DriveInverter_Build_2_ert_rt_w_2.zip	🟢 ready
KyeLessAccessControll.zip	🟢 ready

< Previous 1 2 3 Next >

Project Structure

#	Files	Size	Status
	📁 .	1.1 MB	
	📁 Corvette_DriveInverter_Build_3_raptor_rt_w	1.1 MB	
	📁 tmwinternal	376 B	
	📄 simulink_cache.xml	376 B	🟢 OK
	📄 58NN_app.ld	11.1 KB	🟢 OK
	📄 58NN_app.lkf	11.8 KB	🟢 OK
	📄 build.bat	4.7 KB	🟢 OK
	📄 compiler.args	2.4 KB	🟢 OK
	📄 Corvette_DriveInverter_Build_3.bat	48 B	🟢 OK
	📄 Corvette_DriveInverter_Build_3.c	78.3 KB	🟢 OK
	📄 Corvette_DriveInverter_Build_3.h	126.7 KB	🟢 OK
	📄 Corvette_DriveInverter_Build_3.mk	2.4 KB	🟢 OK
	📄 Corvette_DriveInverter_Build_3_data.c	73 KB	🟢 OK
	📄 Corvette_DriveInverter_Build_3_log.txt	65.7 KB	🟢 OK
	📄 Corvette_DriveInverter_Build_3_manif...	3.3 KB	🟢 OK
	📄 Corvette_DriveInverter_Build_3_private.h	1.7 KB	🟢 OK
	📄 Corvette_DriveInverter_Build_3_types.h	844 B	🟢 OK
	📄 data.c	14.9 KB	🟢 OK
	📄 data.h	24.5 KB	🟢 OK
	📄 data_api.h	575 B	🟢 OK
	📄 hw_linker.args	1.4 KB	🟢 OK
	📄 L9945_raptor_cfg.c	4.5 KB	🟢 OK
	📄 Lin_Cfg.c	1.6 KB	🟢 OK
	📄 Lin_Cfg.h	1.7 KB	🟢 OK
	📄 platform.c	1.2 KB	🟢 OK
	📄 platform_api.h	739 B	🟢 OK
	📄 raptor_can_config.c	17.2 KB	🟢 OK
	📄 raptor_can_config.h	2 KB	🟢 OK
	📄 raptor_e2epw_config.c	1.5 KB	🟢 OK
	📄 raptor_e2epw_config.h	1 KB	🟢 OK
	📄 raptor_gen.c	14.6 KB	🟢 OK

Generated requirements

Project Structure

(27)

Product Requirements

(202)

Subsystem requirements

(172)

Component requirements

Traceability

Download requirements

Full screen requirements

Select item to download requirements

Select item to download requirem...

Project Description

Please provide as detailed a description as possible of the project. That will help hyperpilot understand a context of the code you want to write requirements for. Tell us about the use of the project, hardware it can run on, etc.

Case Study - Test Development

Target: determine the productivity boost Hyperpilot^ offers when generating a test suite based on requirements.

- The trial would use real-world data from a legacy project, provided by New Eagle: a Motor Control Unit. The overall system is comprised of 20 complex subsystems; each with high quality requirements previously elicited.
- Tests for each of these subsystems were previously created by a team of QA engineers, using an AI Copilot driven by Gemini. The amount of resource required was recorded by New Eagle.
- One example subsystem was selected for the pilot, and a single engineer was given the task to generate a test suite for it with the assistance of Hyperpilot^. It took 5 minutes to generate the tests and 2 hours to review them.

	Test Dev Time (weeks)	Headcount	Man-hours (extrapolated)	
● QA Engineers + Gemini	15	4	>1200	
● Engineer + Hyperpilot^	2	1	<40	...30x reduction

Project navigation



- Home
- Interfaces
- Import requirements
- Analyse requirements
- Unit tests
- Simulation tests
- Test script
- Test suite build

Select tests types to generate

- Functional tests
- Safe state tests
- Boundary Value Tests
- Error Handling Test

Generate Tests

Remove All

**103 Tests Generated
in Total
(EV Inverter SW Unit)**

Select test types to display

Custom test

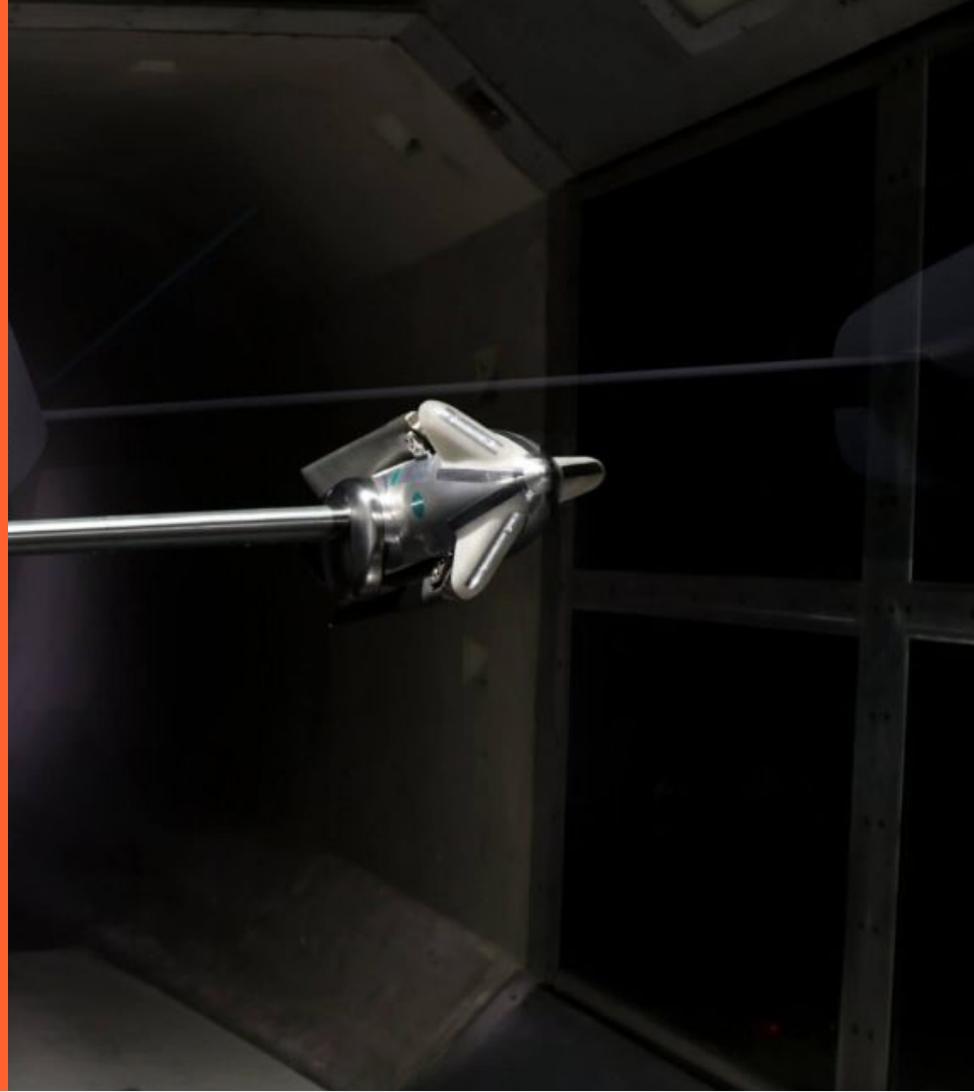
Download accepted Unit Tests

- Torque Split Calculation with Faulty Battery Resistance Signal
- Division by zero/invalid computation protection
- Out of range input torque request handling
- Verify torque split logic when TrqReq_Nm is zero
- Charge Plug State Boundary in Combination with Torque Request
- Verify drive motor torque split normal positive scenario
- Combined Input error and state transition handling
- Verify inverter enable output false on RunMode edge negative transition
- Verify drive motor torque split with negative input
- Combination error with ChgPlugState and DrvInvtrDsbl
- CAN limit min greater than max edge case
- Clamp outputs on out-of-bounds temperature inputs

Requirements under test

ID: "COMP-DriveInverter-FUNC-
Body: "The component shall con
motor torque split output as 50%
request signal (TrqReq_Nm) eve
cycle. The output (DrvMtrTrqRec
clamped within safe operational
invalid or out-of-range, as impler
Corvette_DriveInverter_Build_3_
Title: "Compute Drive Motor Torc
Category: "functional"

Autopilot^ - a new
level of automation^

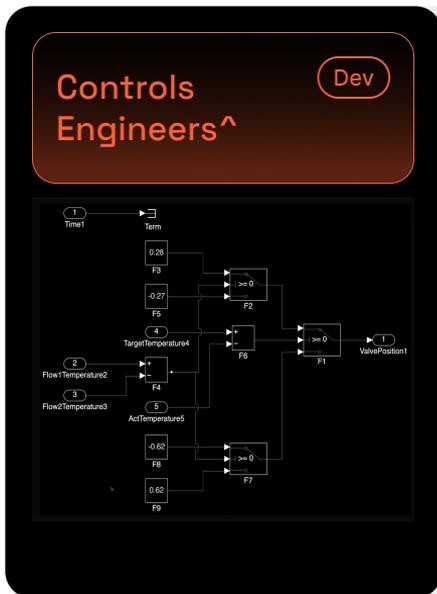


Our Autopilots

Copilots

Autopilots

Powered by a world-first ML model, Autopilots develop the algorithms that control physical systems, **without the need for human-approval.**



FEATURES

- Creates control software from requirements, tests and simulation models.
- **Output software passes 100% of tests, fully unsupervised by humans.**
- No reliance on legacy control algorithms, each solution is invented in real time.

BENEFITS

- 10x cheaper, 10x faster.
- Unlimited scale. Deploy as many Autopilots as you have ideas.
- Invents solutions to novel problems, and novel solutions to existing problems.
- Ideal for safety-critical applications, e.g. automotive, aerospace, and defence.

Autopilots ^

Our autopilots with world-first machine learning make 100% automation possible.

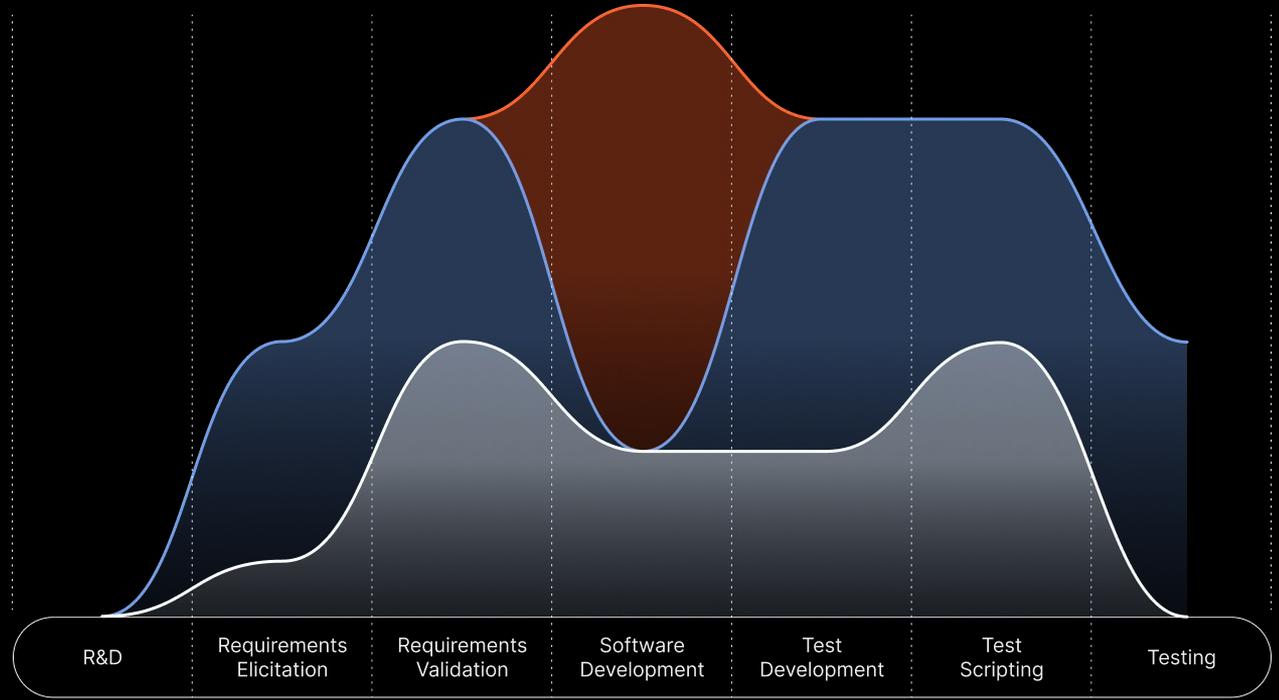
● Our Autopilots

● Our Copilots

● LLM chat-based tech

Hyperpilot ^

% Level of AI Automation



There is a big difference between 99% and 100% automation

That final 1% means everything.

At 99%, you still need to check every line of code.

Autopilots ^

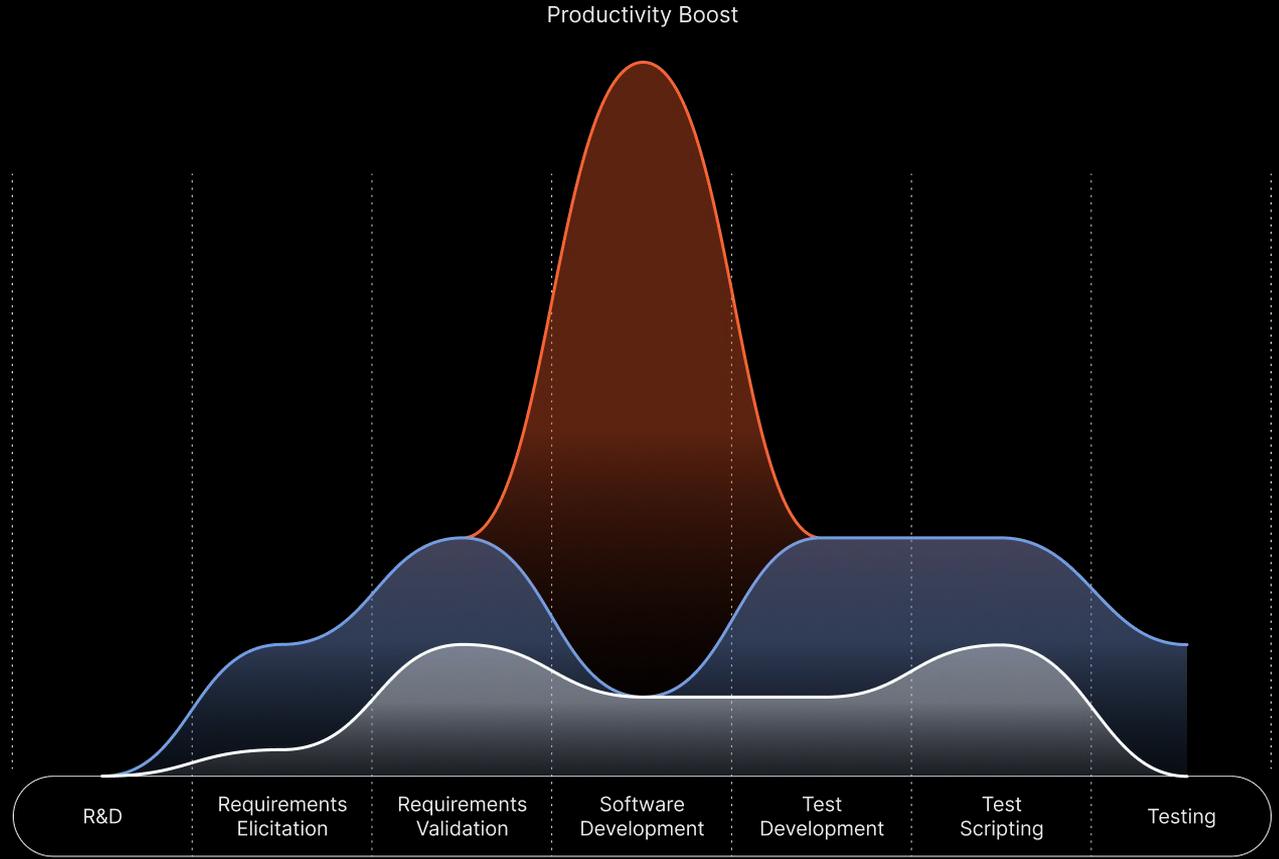
100% automation
unlocks
exponential
productivity...

● Our Autopilots

● Our Copilots

● LLM chat-based tech

Hyperpilot ^



Autopilots ^

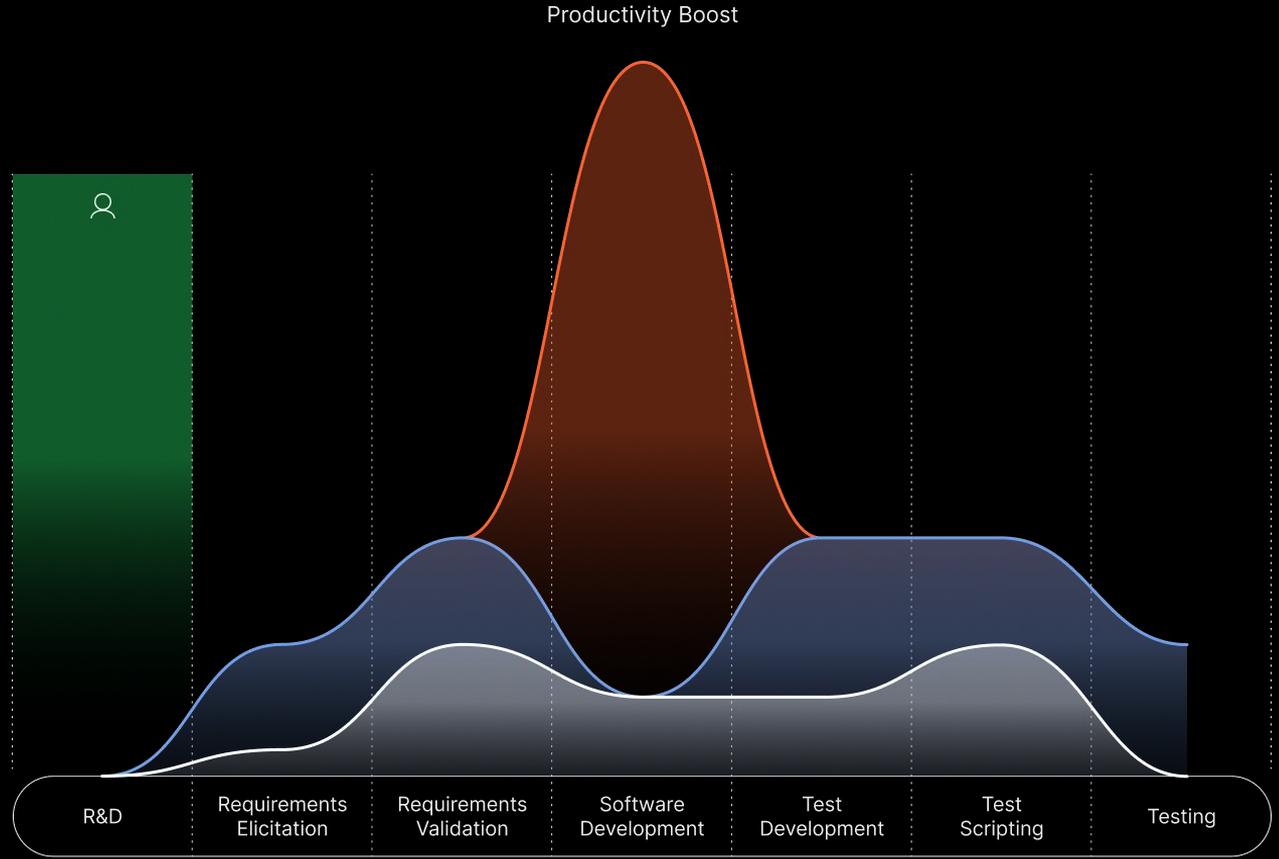
...and the freedom for engineers to push boundaries in R&D.

● Our Autopilots

● Our Copilots

● LLM chat-based tech

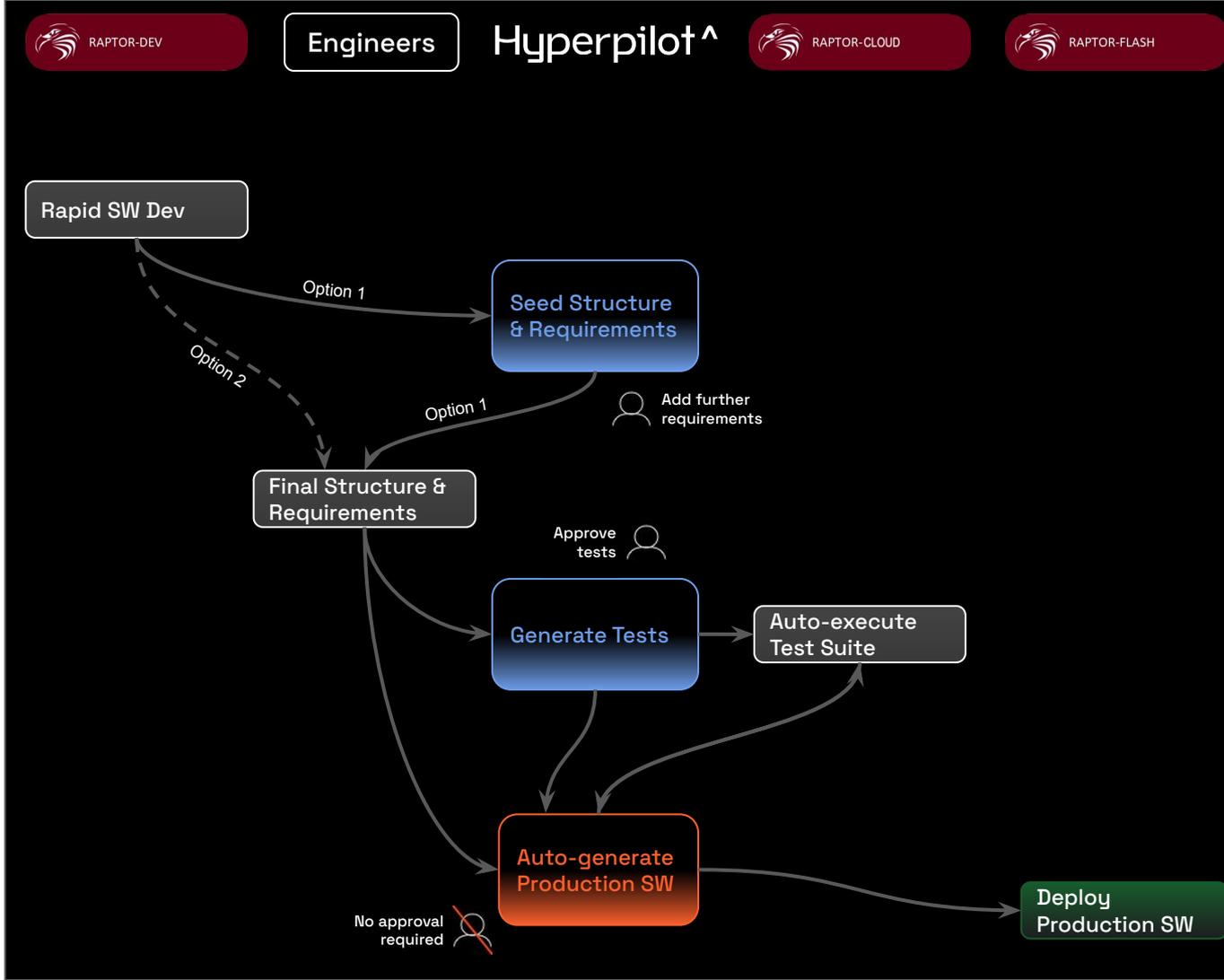
Hyperpilot ^



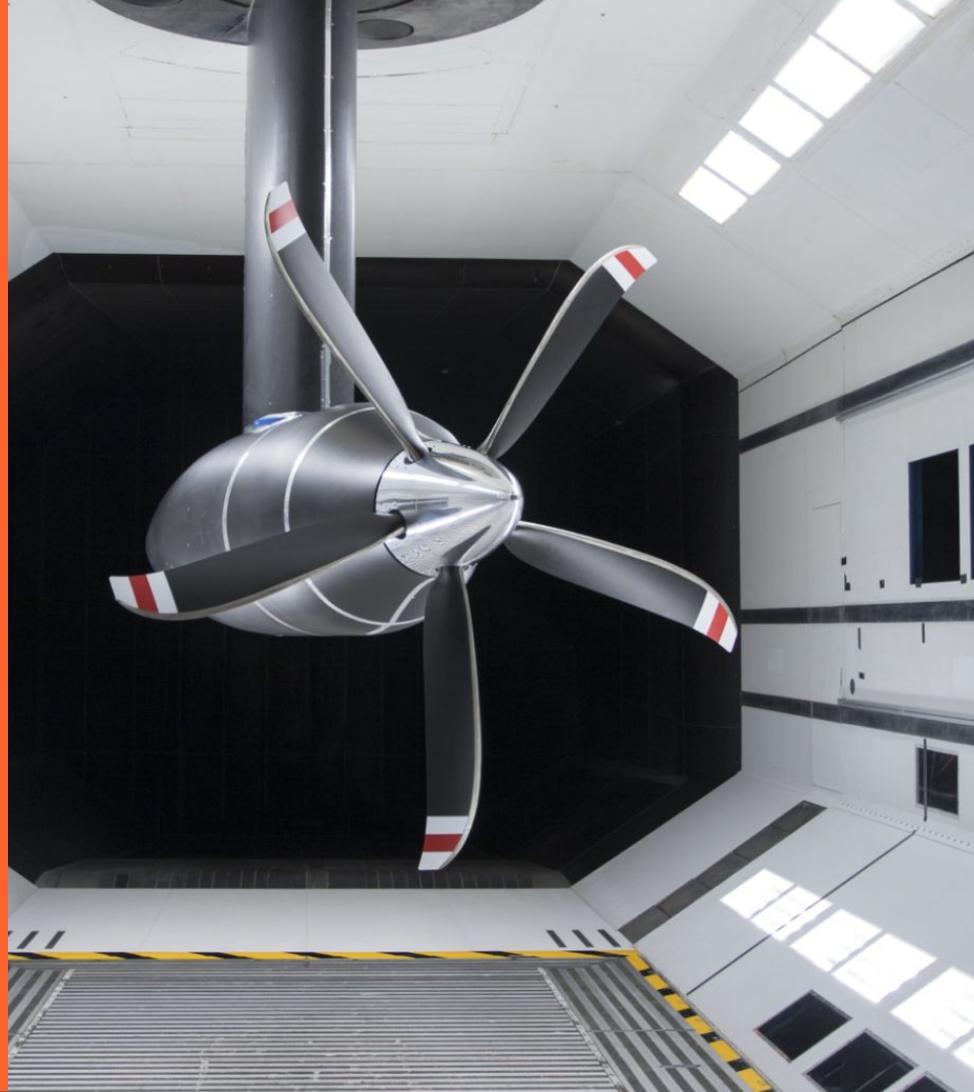
Where do **Autopilots^** fit in with Raptor?

Implementing Autopilot^

- Start with Requirements and Tests, generated using Copilots^ or manually.
- Generate Control Software using Autopilot^.
- Generates software 100% automatically, learning from the results of tests executed on Raptor-Cloud.
- Maintain SW beyond Production using Raptor's other tools



Seamless
Implementation ^

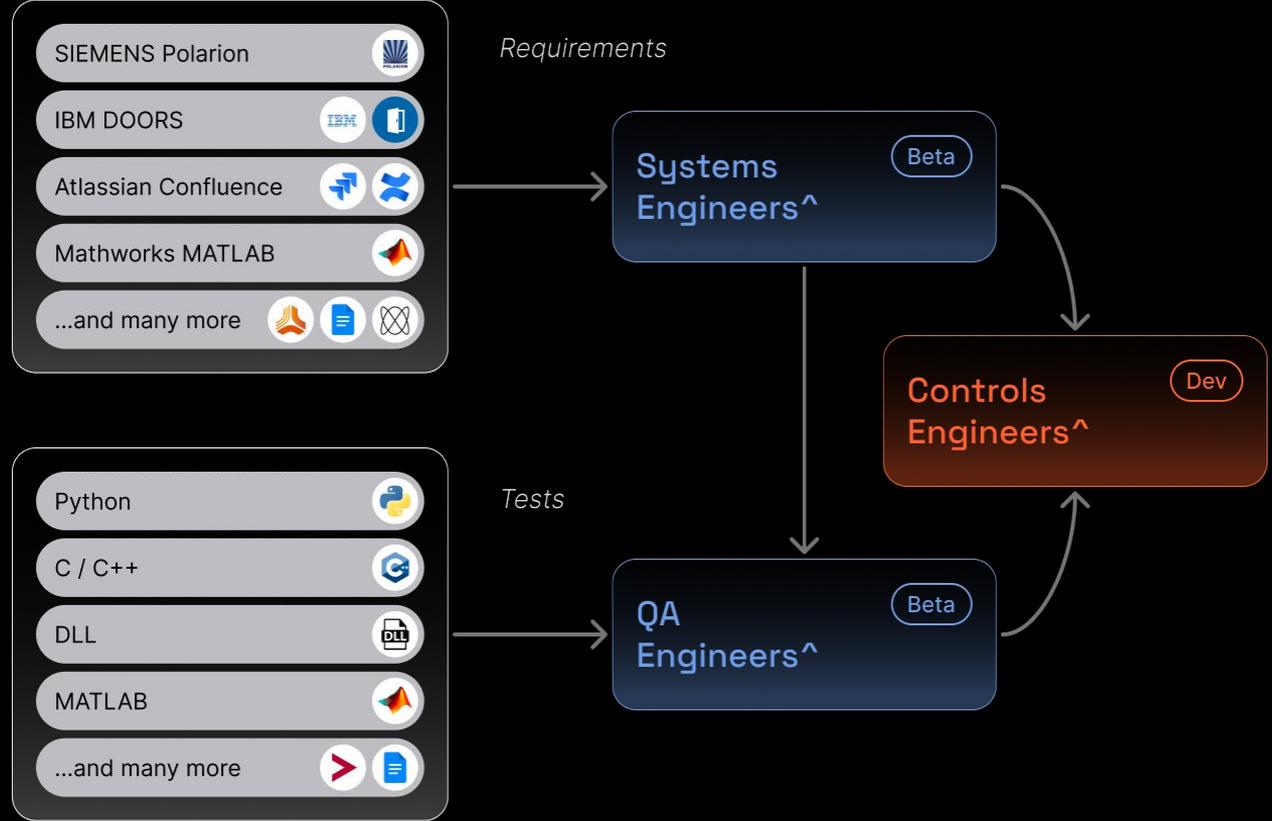


Seamless implementation ^

Fits seamlessly into your toolchain

Just like your engineers, Hyperpilot^ is technology-agnostic.

It works seamlessly and immediately with all requirements management and test development platforms. Providing value from day 1.

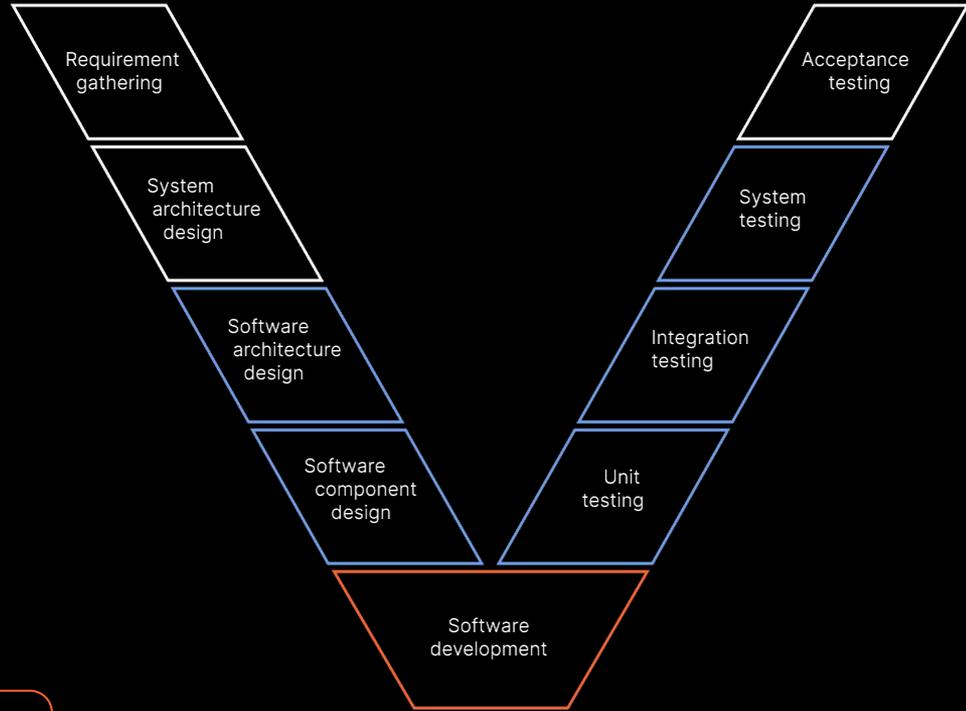


Seamless implementation ^

Fits seamlessly into your process

Hyperpilot^ was designed from the very beginning to work exactly like a team of control engineers.

It creates requirements, software, and unit tests in exactly the same way as your engineering team currently does. No need for lengthy and expensive change management.



● Autopilots

● Copilots

Signing up ^

Level up your engineers.

Hypercritical^ and New Eagle are integrating our platforms, creating a seamless user experience.

Our Copilots^ are now available.

Use a company email address to sign up for a free trial.

What you get:

Unlimited access to both Copilots^.

Add up to 20 users from your company for free.

Early access to [Autopilot^](#) in Q1 2026.



Sign up ^

Wrap Up



Systems Engineer^

Quickly develop requirements from your prototype software developed in Raptor Dev, augmenting the work of systems engineers, providing automated analysis of requirements with proposed fixes.

QA Engineer^

Unit test development made easy for fast integration into CI/CD workflow with Raptor Cloud.

Production Development

Augment your production development with Systems Engineer^ and QA Engineer^ to enable fast development of important testing and requirements for your production software.

Controls Engineer^

100% Automation of controls subsystem development, allowing controls engineers to focus on architecture, quality, and getting to test over 10x faster and 10x cheaper.

Questions?



Presented by:

Stephen Sheler,
Applications Engineering Manager,
New Eagle



Presented by:

Elie Talj,
Co-Founder & CEO,
Hypercritical



Learn More in the NEST

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and additional insights.

