



GENIVI software as portfolio.

Where can we go next? How?

October 20, 2016 | AMM Burlingame - All Members

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Who are Codethink?

- Provide software engineering & consultancy services.
- Expert in Linux and Open Source software.
- Focus on automotive industry, embedded devices & enterprise infrastructure.
- UK Headquarters, serving clients in EU, US and Asia.
- Independent and unbiased.
- GENIVI Associate Member since 2012

Why Codethink?

Open Source company.

+

Automotive experience.

+

Passionate about building & delivering complex Linux
systems.

The speaker

- Principal Consultant - FOSS at [Codethink Ltd](#)
- Experienced in managing people & programs/projects in the open. Product ownership experience.
- At GENIVI Alliance.
 - Codethink Ltd representative.
 - GDP Delivery Team Lead.
 - Tools Team Expert Group Coordinator.
- More about myself at <http://www.toscalix.com>

Background: 14th AMM

Background:

14th AMM. One organization, one delivery chain for a portfolio

Challenge: 3.- Design of GENIVI portfolio

1. The current portfolio design present **several structural and tactical challenges.**
2. GENIVI has a better chance to take advantage of FLOSS by approaching these challenges **with a FLOSS mindset.**

Potential Solutions: Work with a portfolio approach first. Then focus on *product* transits.

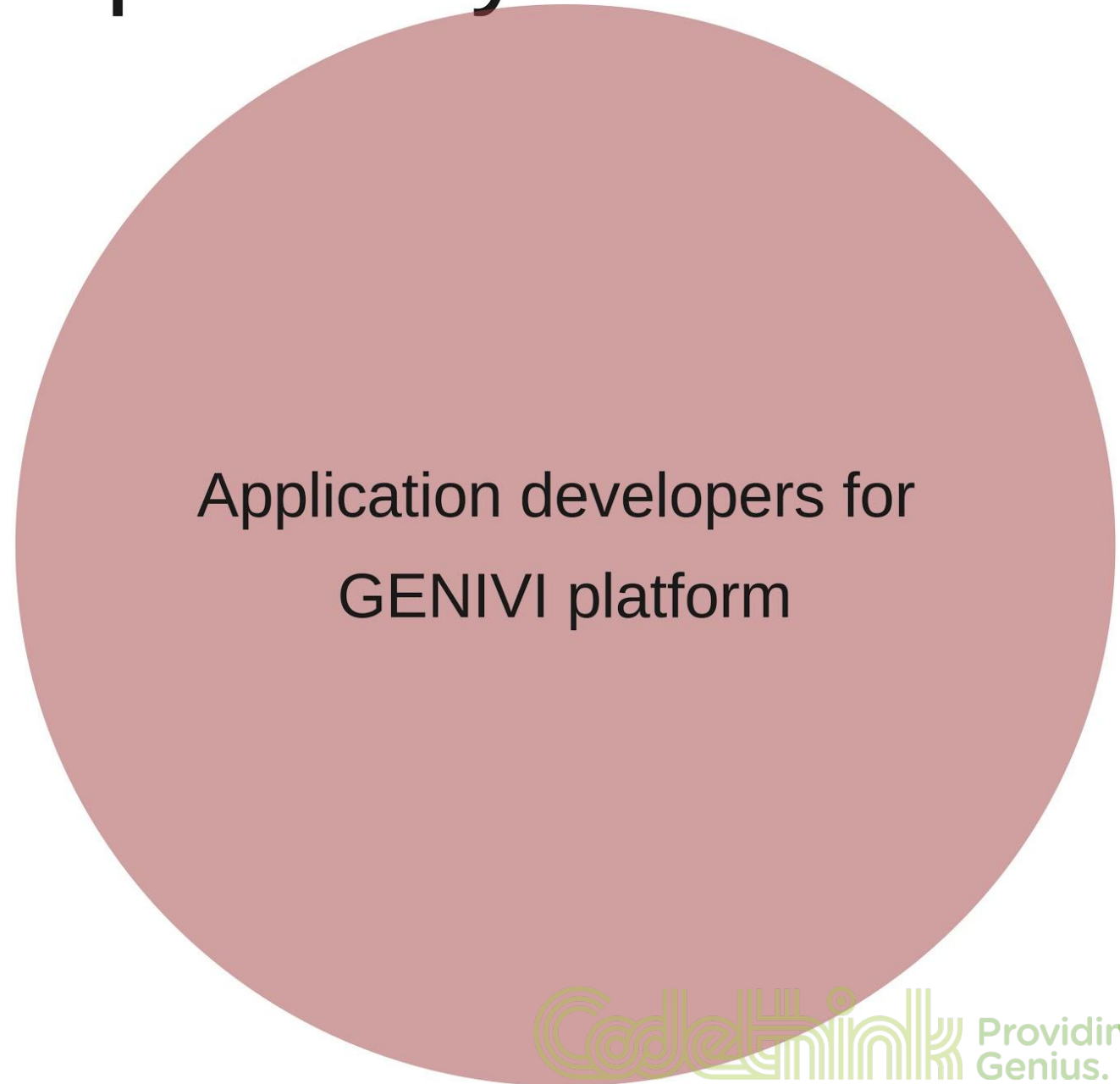
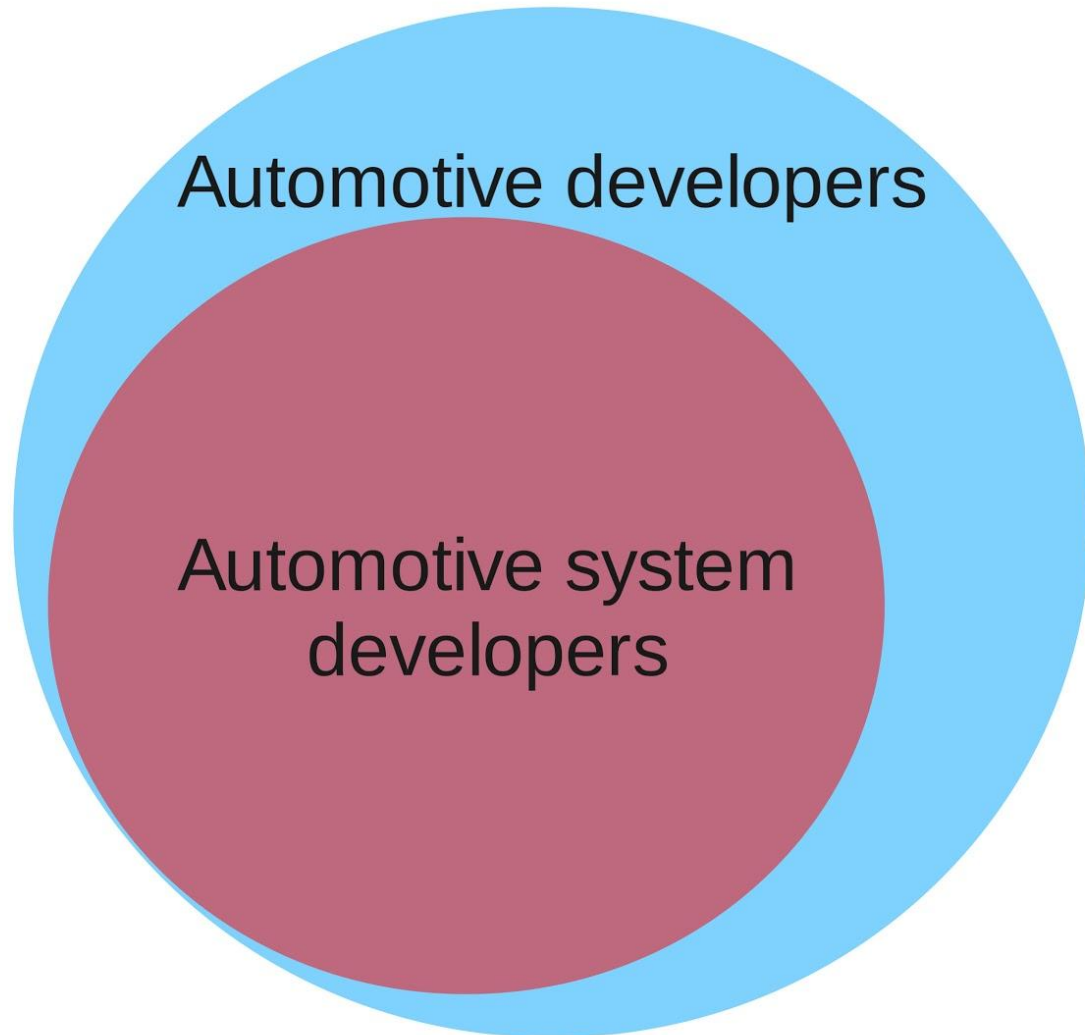
GENIVI Today



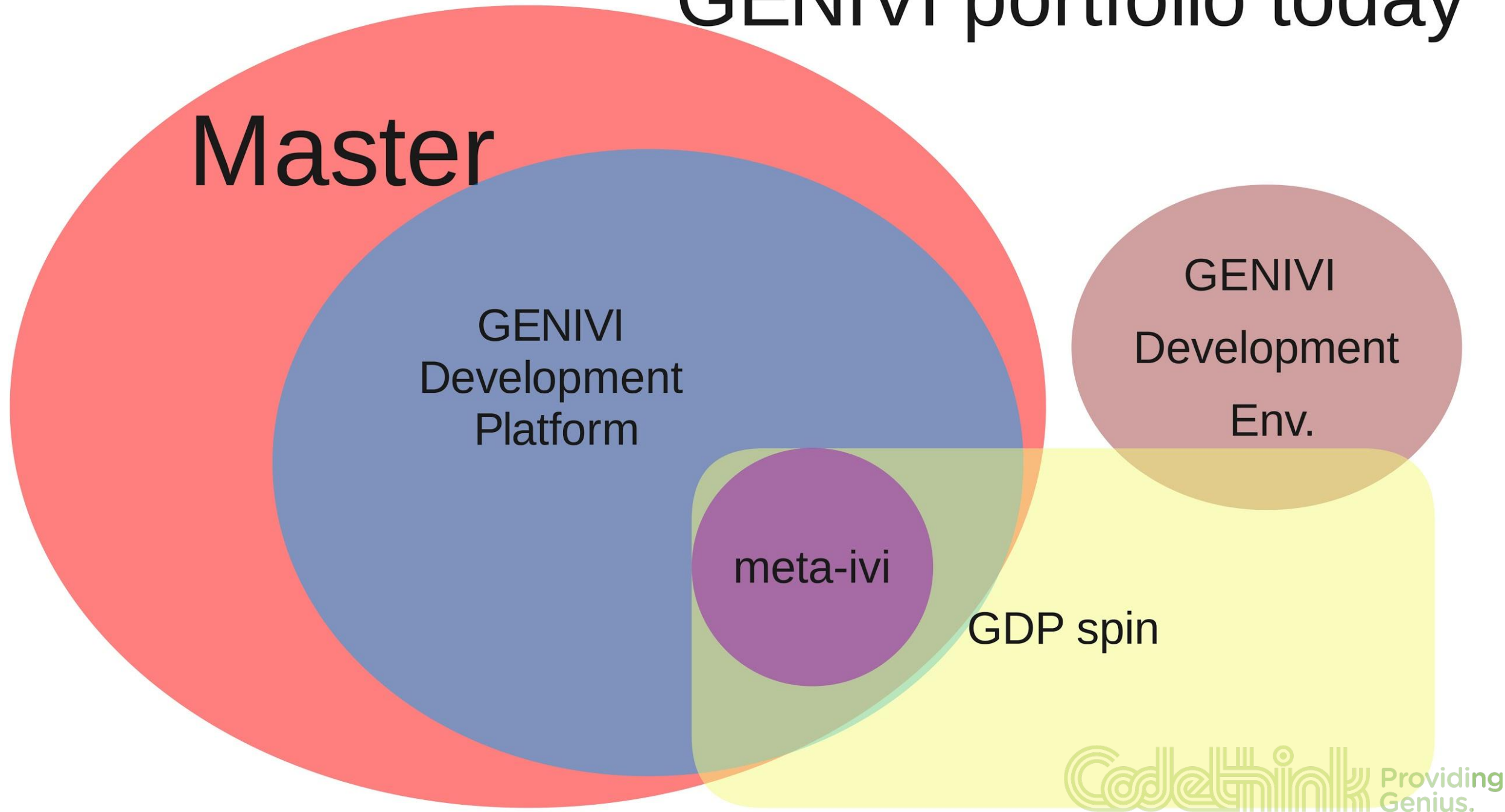
Current GDP delivery project main goal

Increase GENIVI's consumers base:
Application Developers

GENIVI Target Groups today



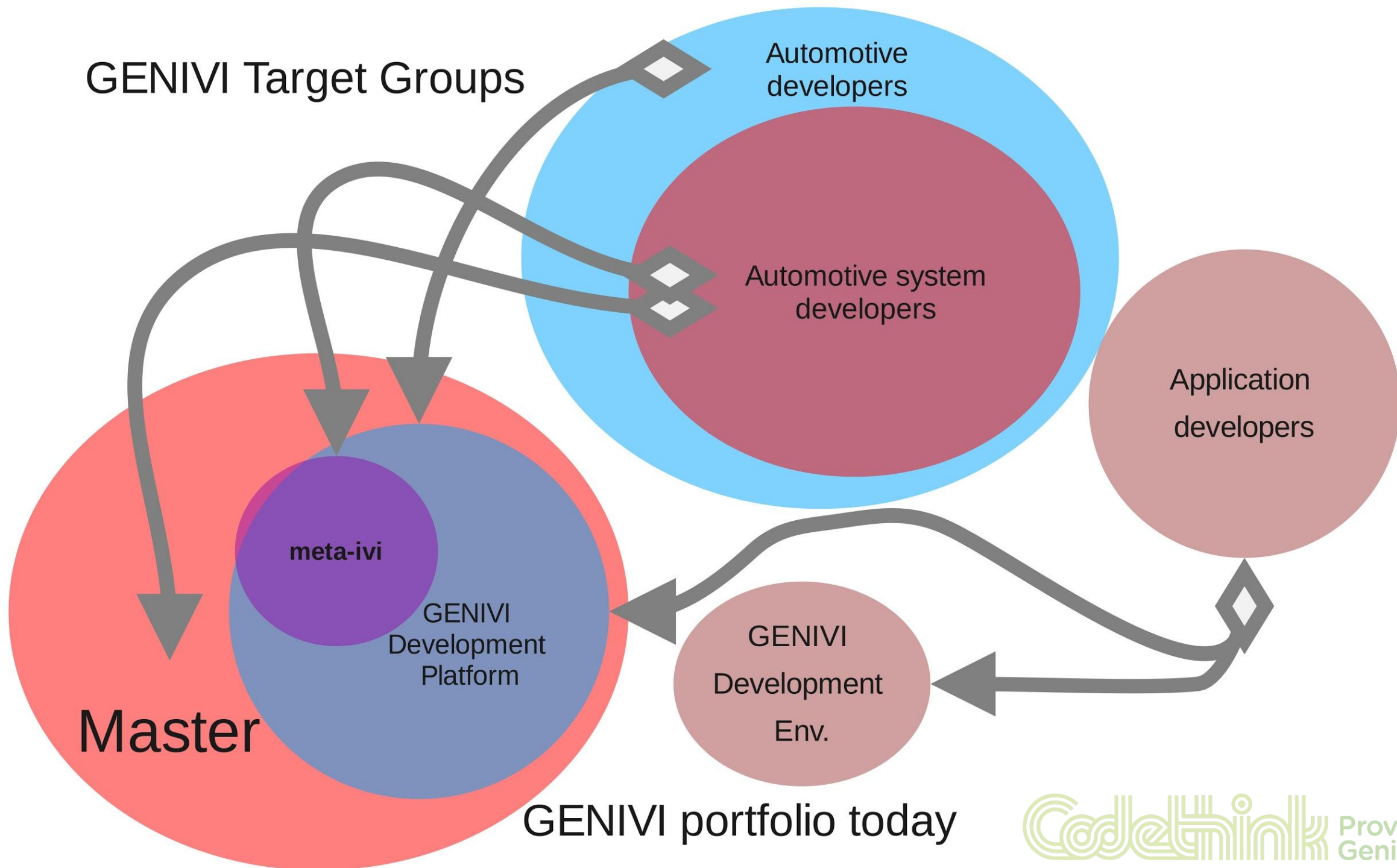
GENIVI portfolio today



GENIVI portfolio today

Outcome	Target group	Description
Master	GENIVI contributors	Build the latest available software from scratch.
GDP	GENIVI software consumers. Towards application developers.	Consume GDP through binaries.
meta-ivi	GENIVI Members	Outcome of the compliance process.
SDE	Application developers	Just released the initial version
GDP spins	Specific target groups: automotive Qt developers.	Just released the initial version.

GENIVI Target Groups



Challenges

Statement 1

Professional application developers main target are *in production* platforms that ensure a potential market.

Challenge 1

GDP is not meant to be a system for production (any time soon).

Statement 2

Adopters of any given system in professional environments demand a high level of quality from that system.

Challenge 2

By moving fast to adapt to developers needs GDP cannot meet the stability demands required in automotive.

Statement 3

A platform delivery project requires a significant contribution base to reach a high quality level.

Challenge 3

Application developers are not, by definition, potential contributors of a system/platform, but consumers.

Product / service approach

Engagement

PUSH

Contributor

Advocate

Consumer

Follower

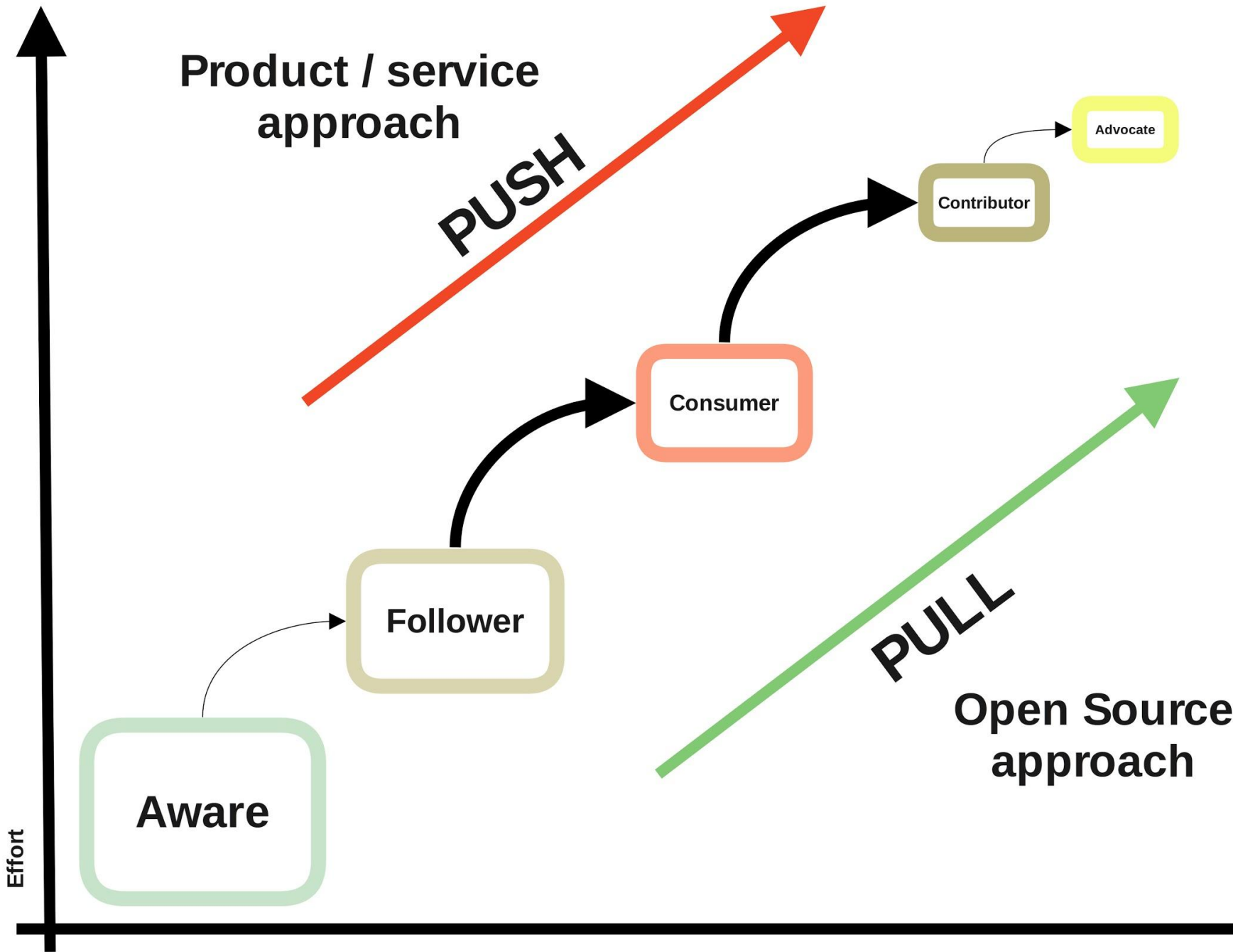
Aware

PULL

Open Source approach

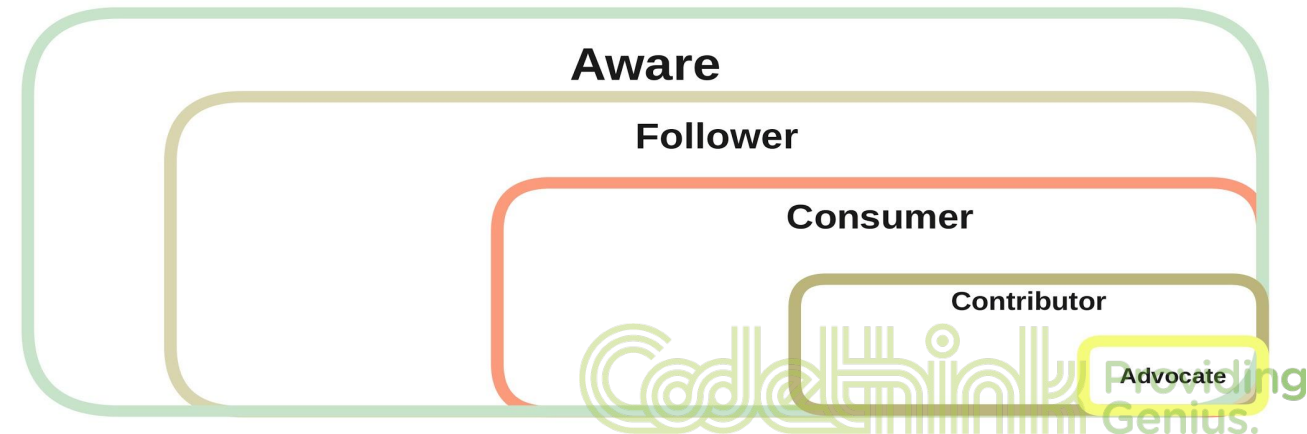
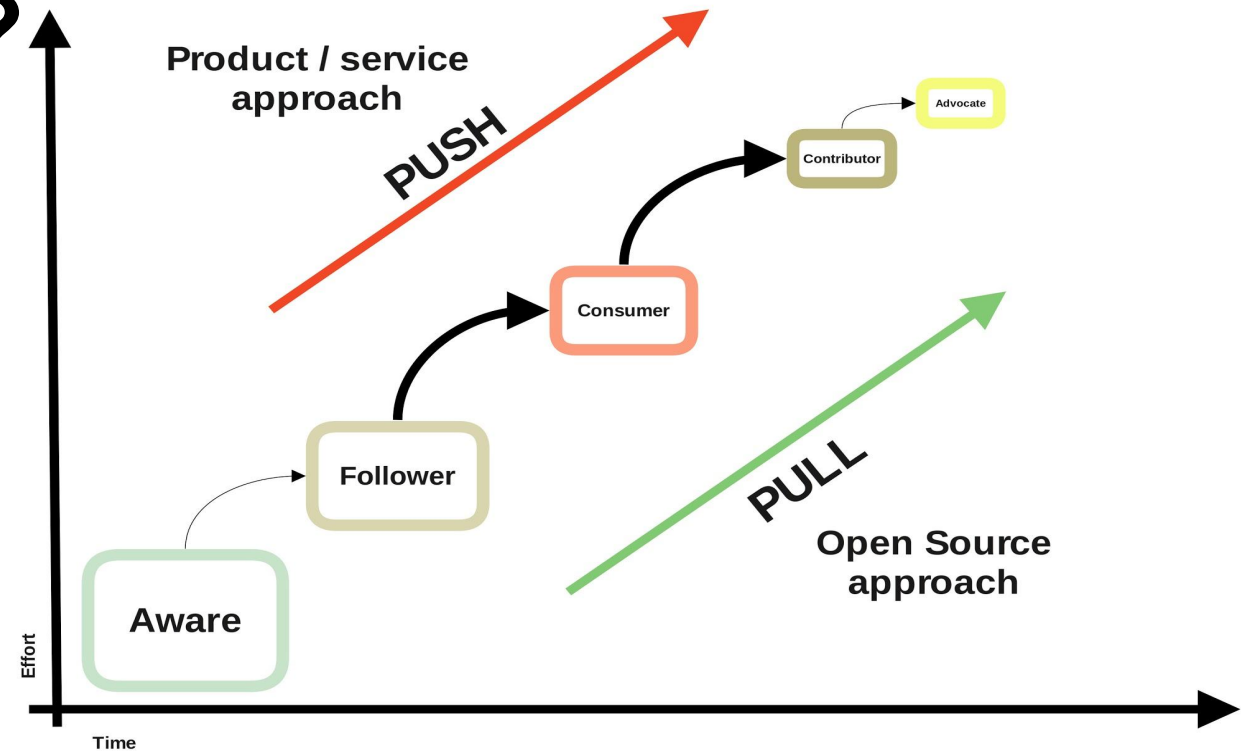
Effort

Time



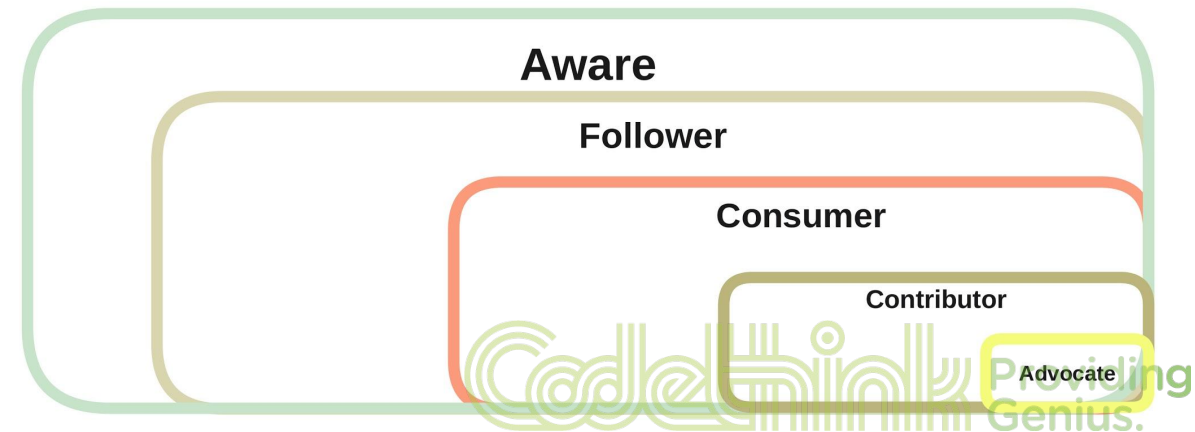
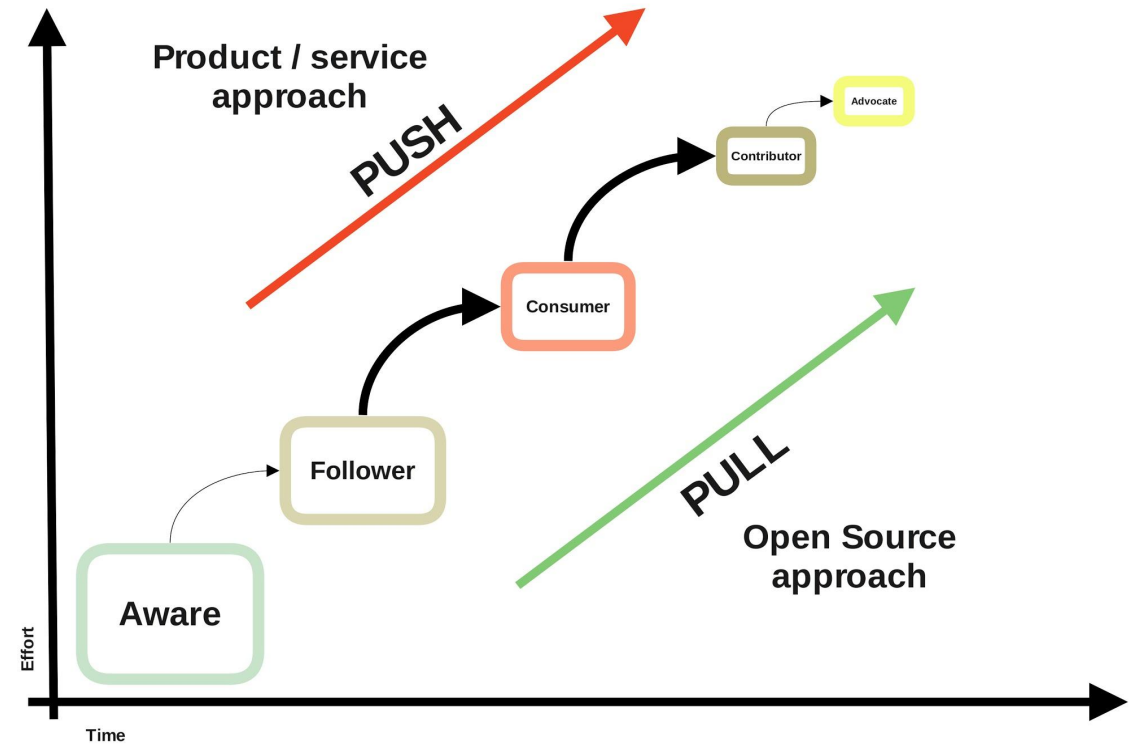
Who do we start with?

1. Today's advocates:
 - a. Any taker?
2. Today's contributors:
 - a. EG members
 - b. GDP contributors
3. Today's consumers:
 - a. Automotive system devs. who demo apps.
 - b. Those who build products including GENIVI software.



Who is the target?

1. Tomorrow's potential advocates:
 - a. Today's contributors: EG Members and GDP current contributors.
2. Tomorrow's potential contributors:
 - a. Today's consumers: automotive system developers.
3. Tomorrow's potential consumers:
 - a. Application developers.



Target groups:

Who?	Today	Tomorrow?	Target Group
GENIVI component dev.	Contributor	Advocate	GENIVI Member system dev.
GENIVI integrator / testers	Contributor	Advocate	GENIVI Member system dev.
Industry sys developer who need a base system to demo apps	Consumer	Contributor	Automotive system dev.
GENIVI Members system devs. who interact with GENIVI components.	Consumers	Contributor	GENIVI Member system dev.
Industry system devs. who interact with GENIVI soft components.	Consumers	Contributor	Automotive system dev.
Industry application devs. who interact with GENIVI soft. components.	Follower	Consumer	Automotive app dev. For GENIVI dev.
Industry system or app devs who does not use GENIVI software	Aware	Followers	Automotive dev.
Embedded system or application developers	----	Aware	-----

Quote 1

“In open source, we feel strongly that to really do something well, you have to get a lot of people involved.” - Linus Torvalds

Quote 2

“You can’t sell it outside if you can’t sell it inside.” - Stan Slap

Quote 3

“Stop selling. Start helping.” – Zig Ziglar

Quote 4

“If you want to go fast, go alone. If you want to go far, go **together.**” - African proverb

Quote 5

“Don't hurry your code. Make sure it works well and is well designed. Don't worry about timing.” - Linus Torvalds

GDP Delivery project main goal

contributors

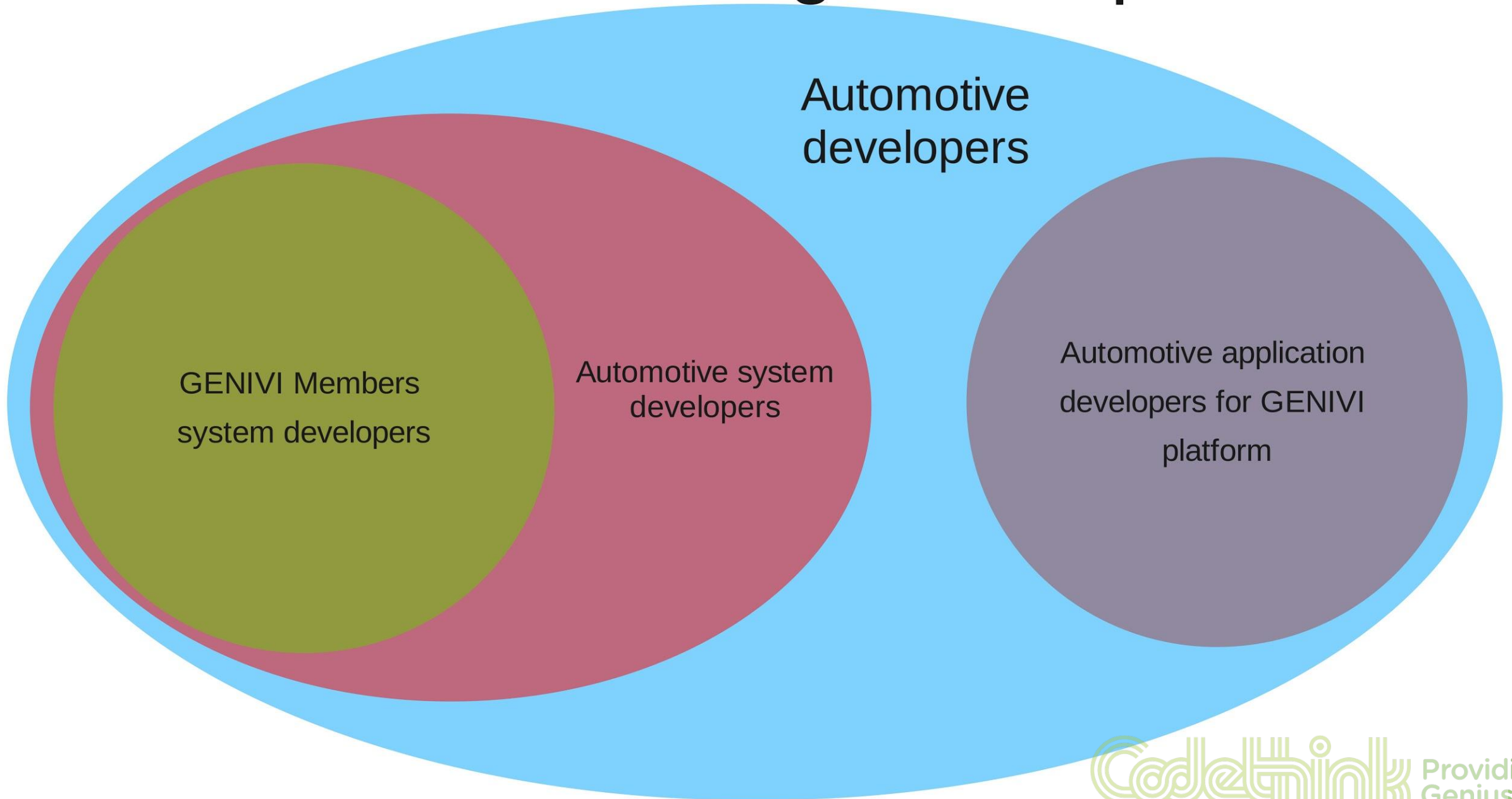
Increase GENIVI's consumers base:

Application Developers

Automotive system developers

Tomorrow: proposal

GENIVI Target Groups



GENIVI's portfolio

- **1.- Master:** targets automotive system devs.

- Central integration point of all GENIVI software.
- Provides the latest available software in an easy way to build from scratch.

- **2.- GDP Core:** targets GENIVI Members.

- Base system very limited in scope system.
- Focus on commodity software for production systems.
- Include GENIVI components that are ready for production only.

GENIVI's portfolio

- **3.- GDP:** targets automotive system consumers.

- Branched from Master. Stabilization. Focus on a pleasant consumption experience.

- **Other deliverables (by third parties)**

- **4.- GDP Spins**

- **5.- SDE:** targets automotive application developers.

- Integration with GDP for an efficient development experience.

GENIVI portfolio

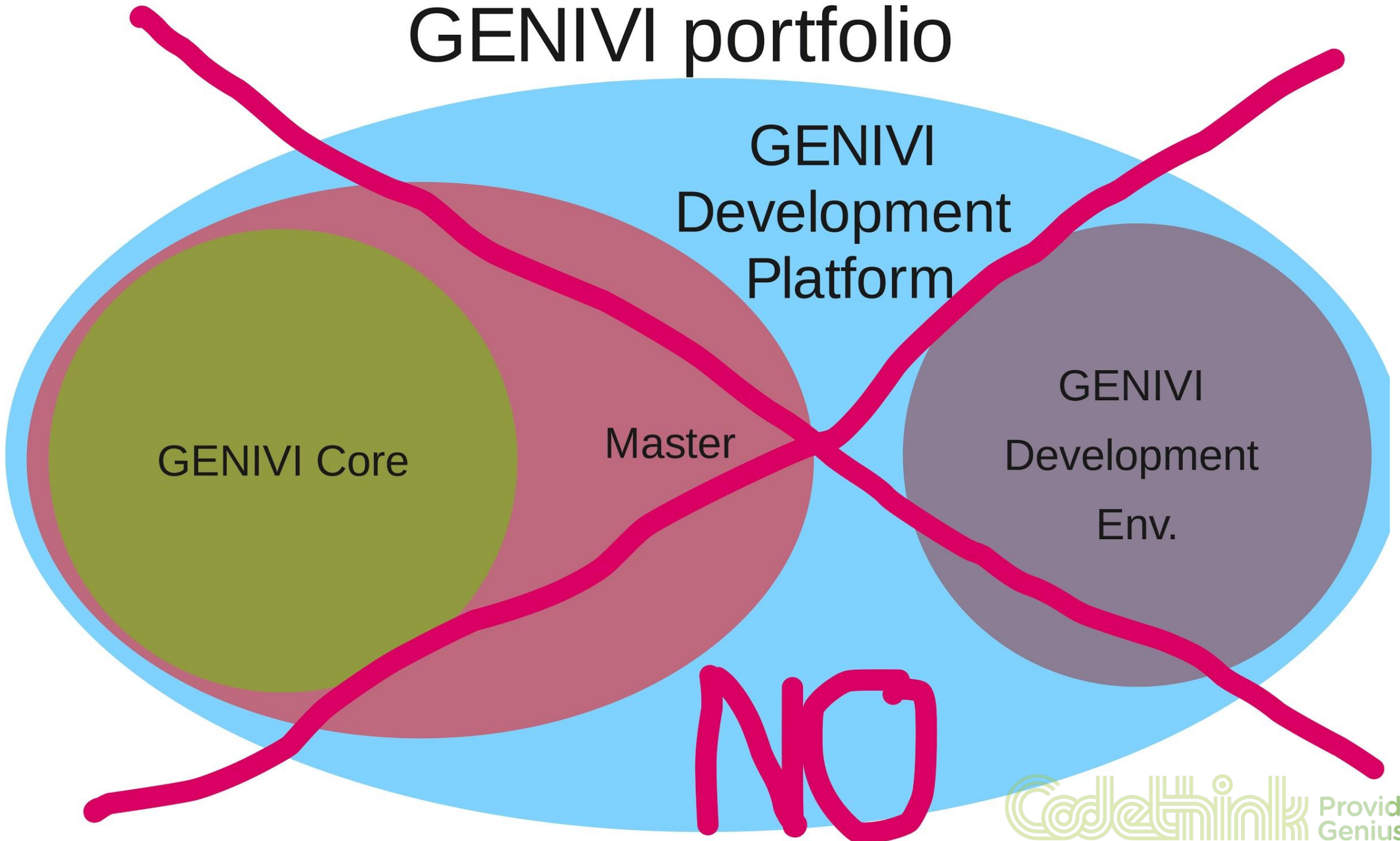
GENIVI
Development
Platform

GENIVI Core

Master

GENIVI
Development
Env.

NO



GENIVI portfolio

Master

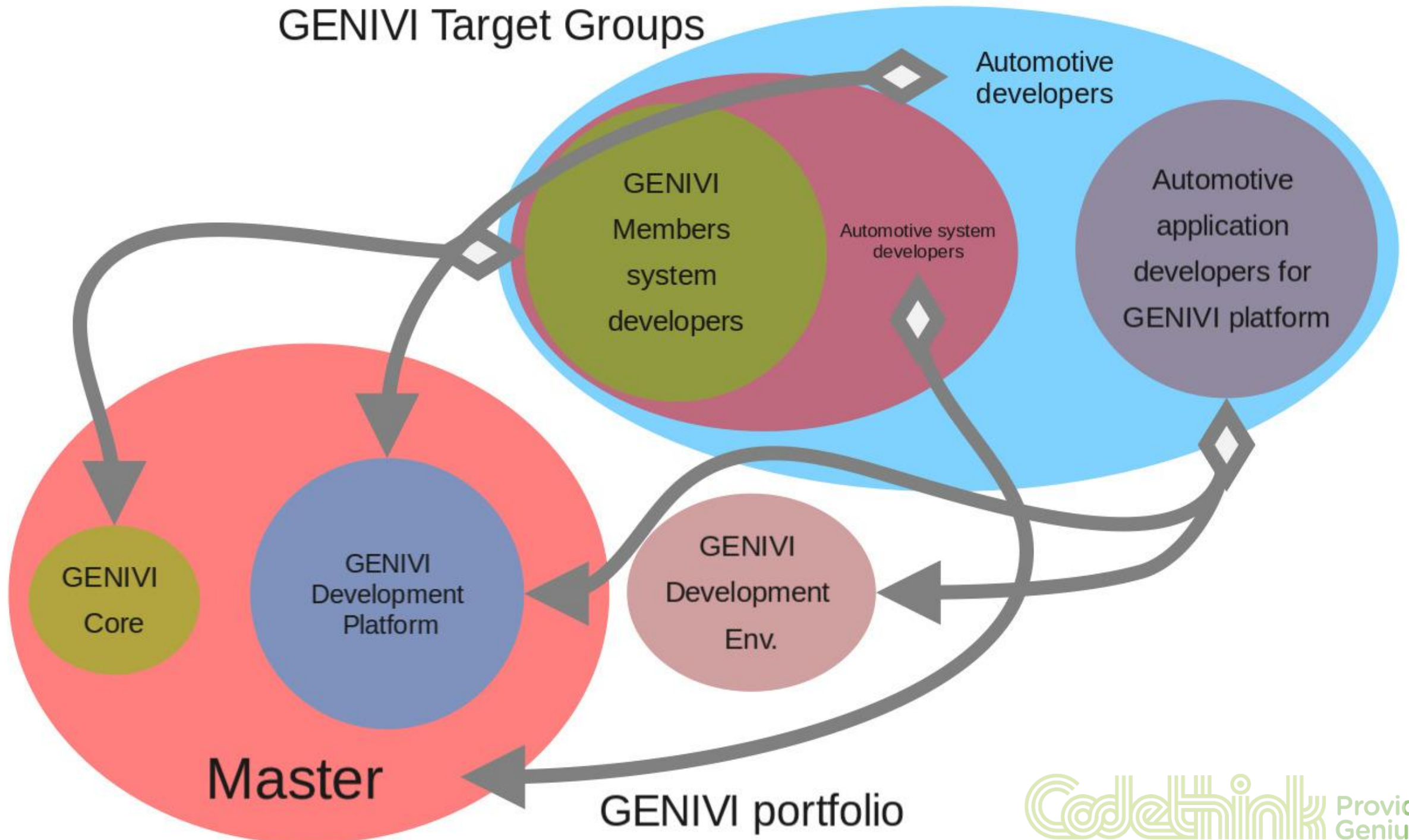
GENIVI
Core

GENIVI
Development
Platform

GENIVI
Development
Env.

GDP spin

GENIVI Target Groups

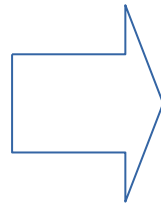
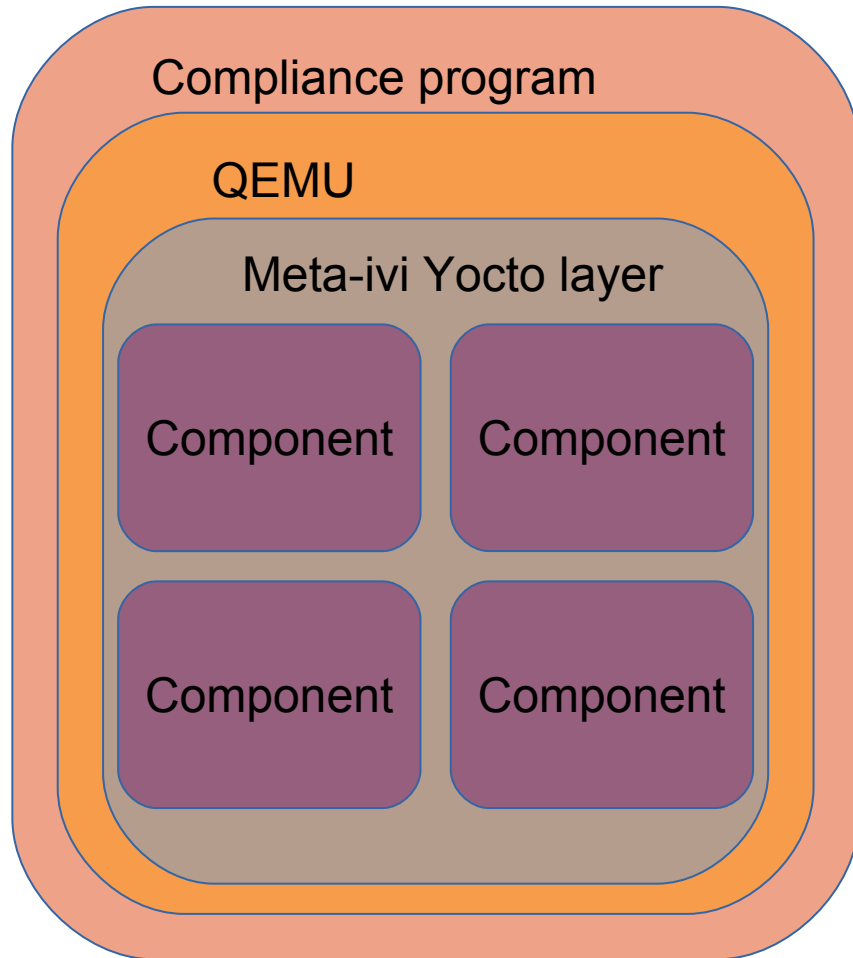


Portfolio design

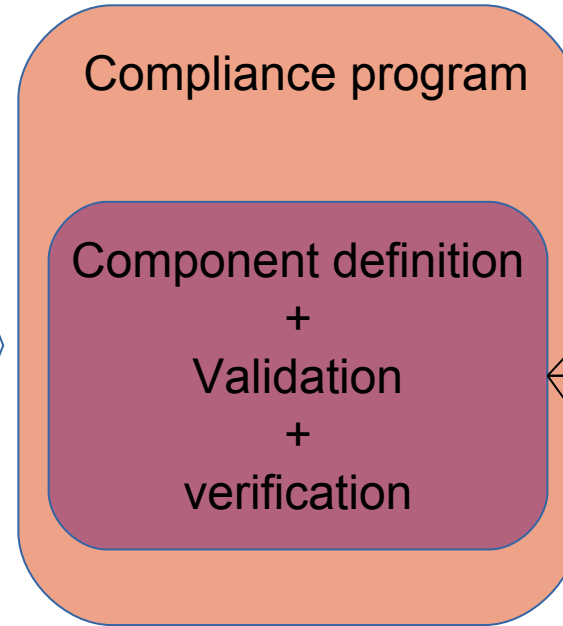
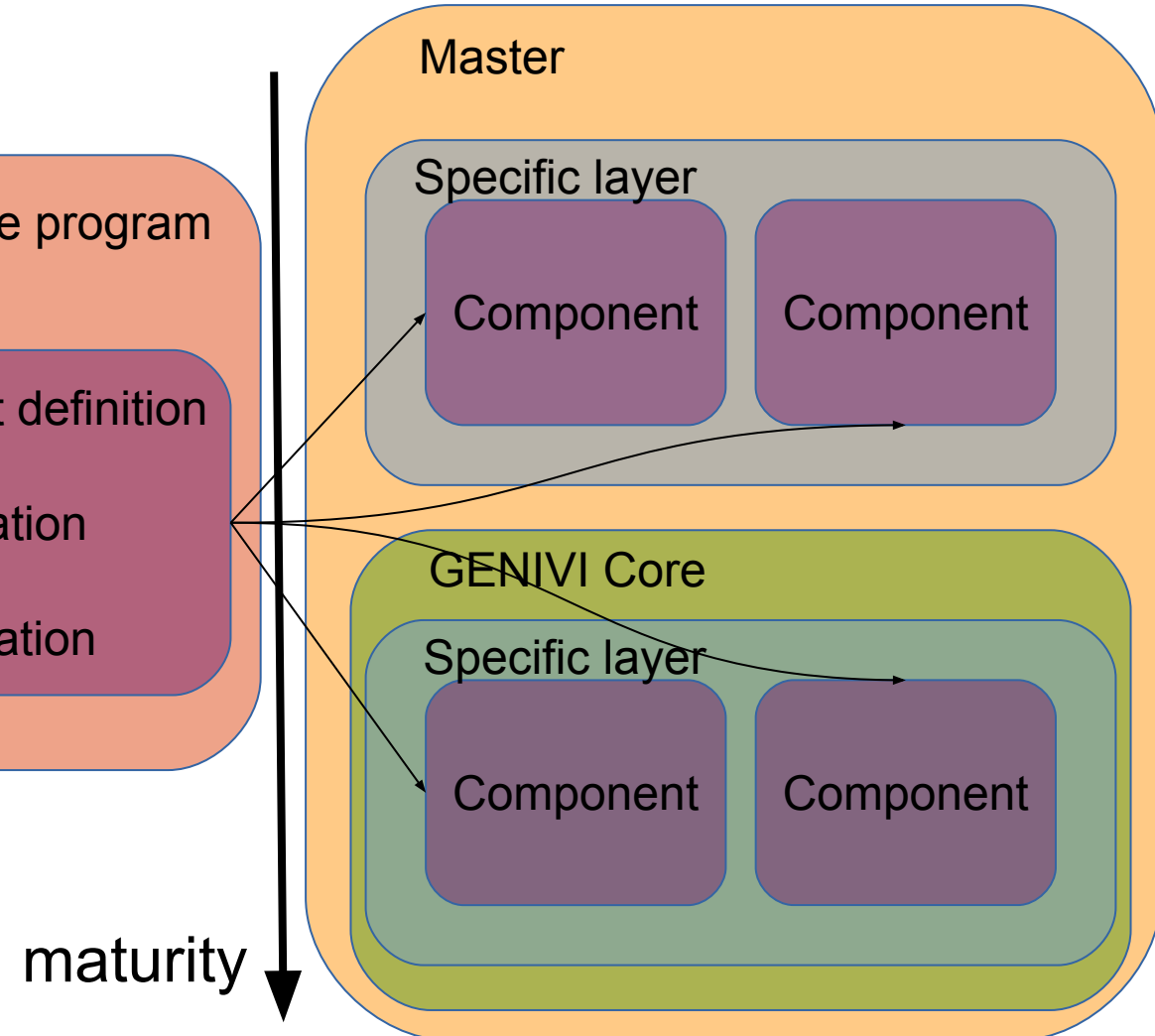
Priority	Target group	Outcome	Description
1	GENIVI Members	GENIVI Core	Pre-production system. Base system + Fully functional GENIVI automotive components from Compliance program.
2	Automotive system developers	GENIVI Master	System used to develop automotive components. Central integration point for third party software. Magma first policy.
3	Automotive developers.	GDP	Full system easy to consume used to promote GENIVI and also as base system for developers, focusing on application developers.
4	Specific target groups	GDP spins	GDP + software targeting specific group. The additional software makes use of the GENIVI APIs and auto software components.
5	Application developers	SDE	Tools kit, integrated with GDP, that is, use GENIVI's API and software components to save time to developers.

What about Baseline

15th AMM



16th AMM

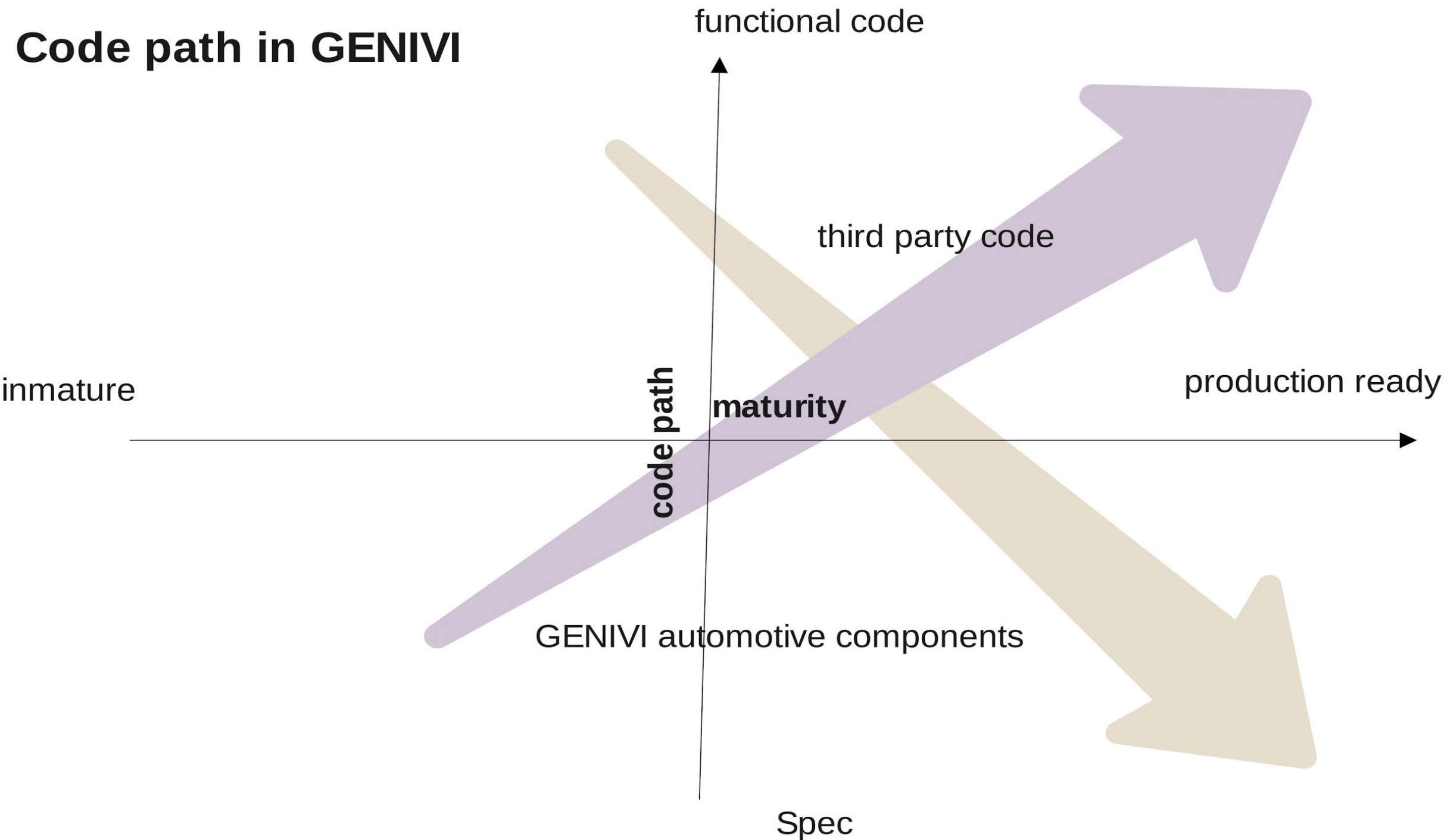


What about Baseline?

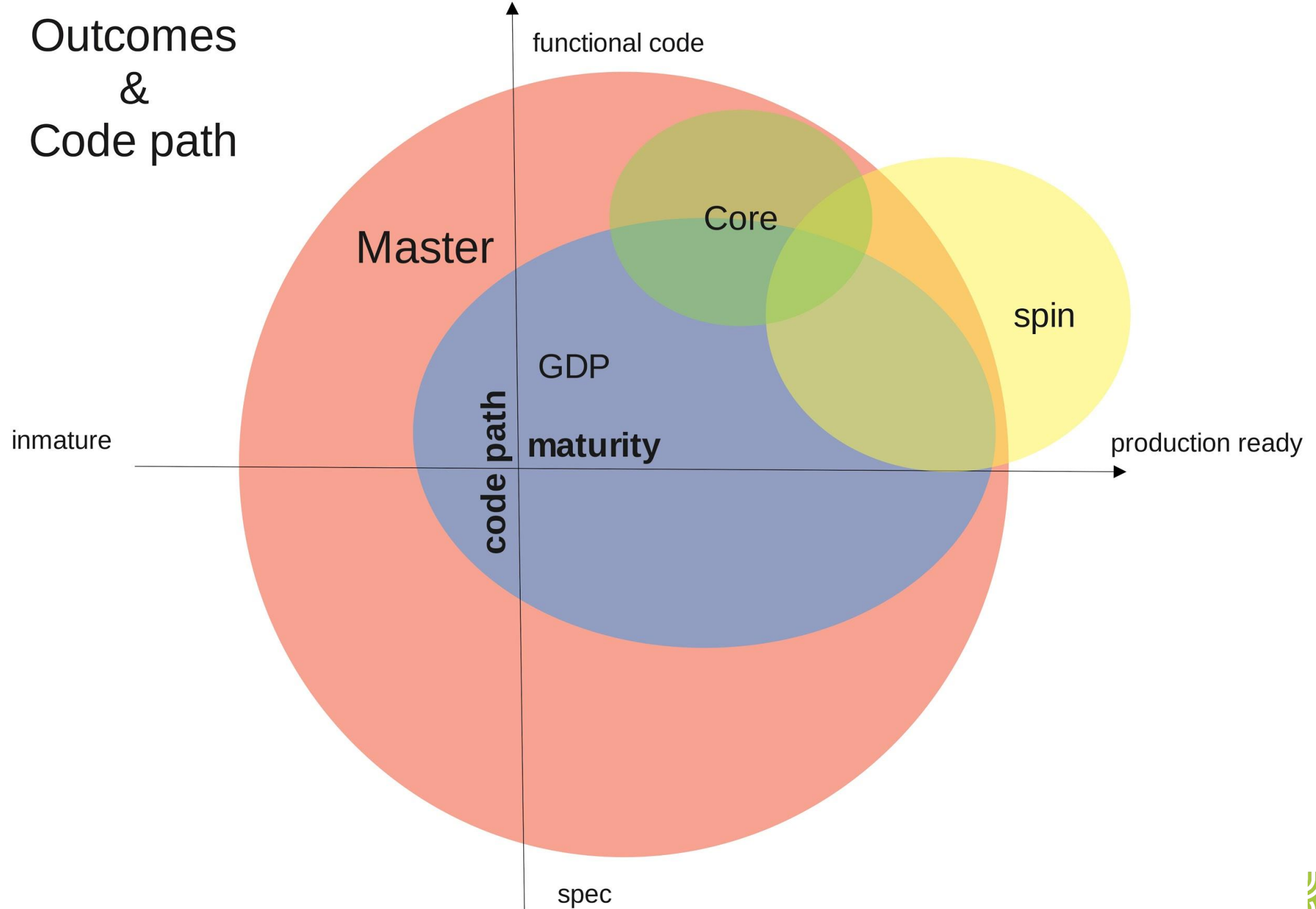
- Compliance is important. The program should remain.
- Separate compliance from delivery.
- Follow a declarative approach.
 - Separate components in functional layers that makes them easier to manage based on different criteria, like maturity.
 - Leave behind the brick/block concept applied to systems.
- Single integration team managing a single integration production chain.
 - Embrace efficiency and collaboration vs structure and isolation.

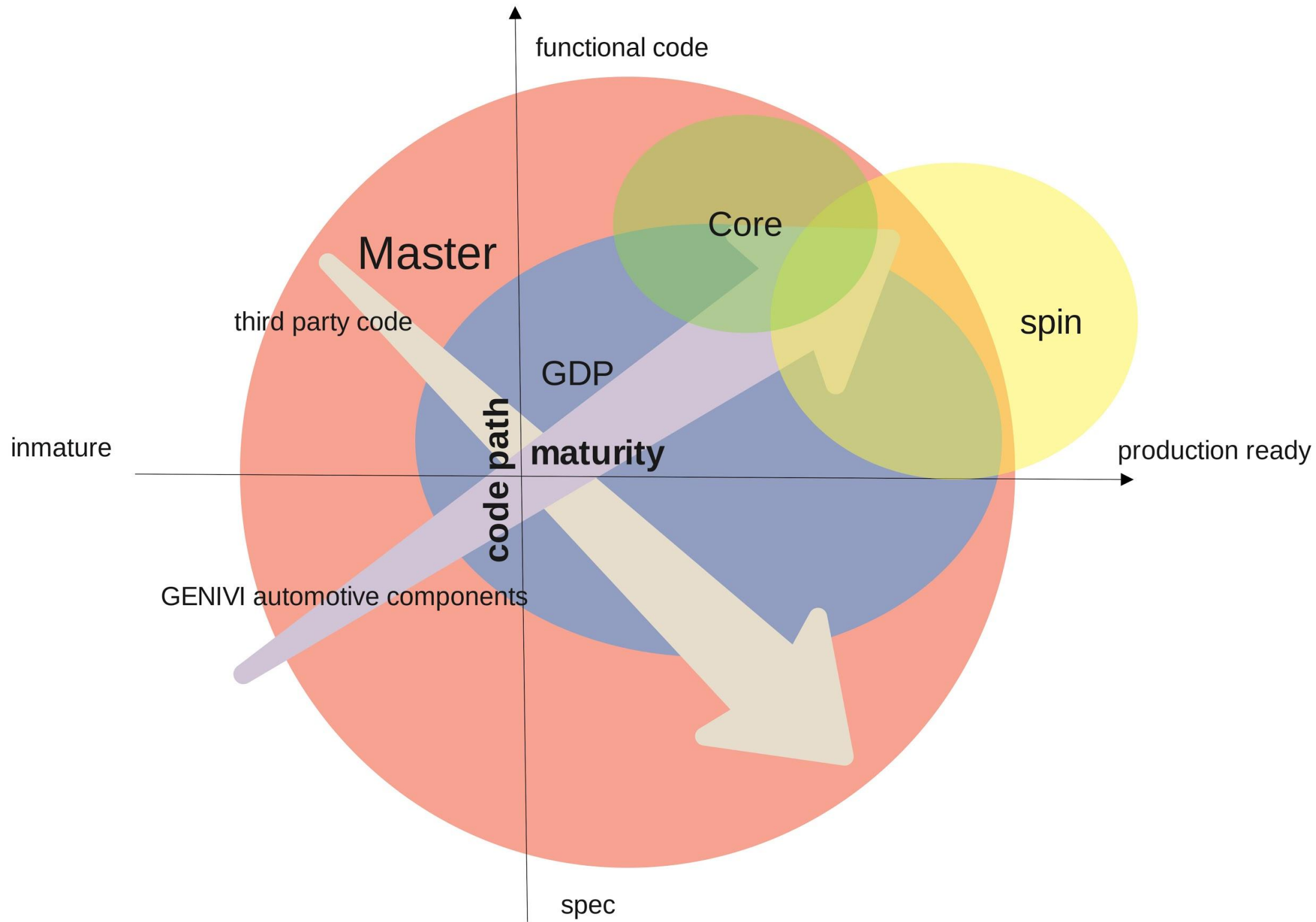
Software “*life cycle*” / *path* within GENIVI

Code path in GENIVI



Outcomes & Code path





From GDP project to Delivery Program

From GDP project to Delivery program

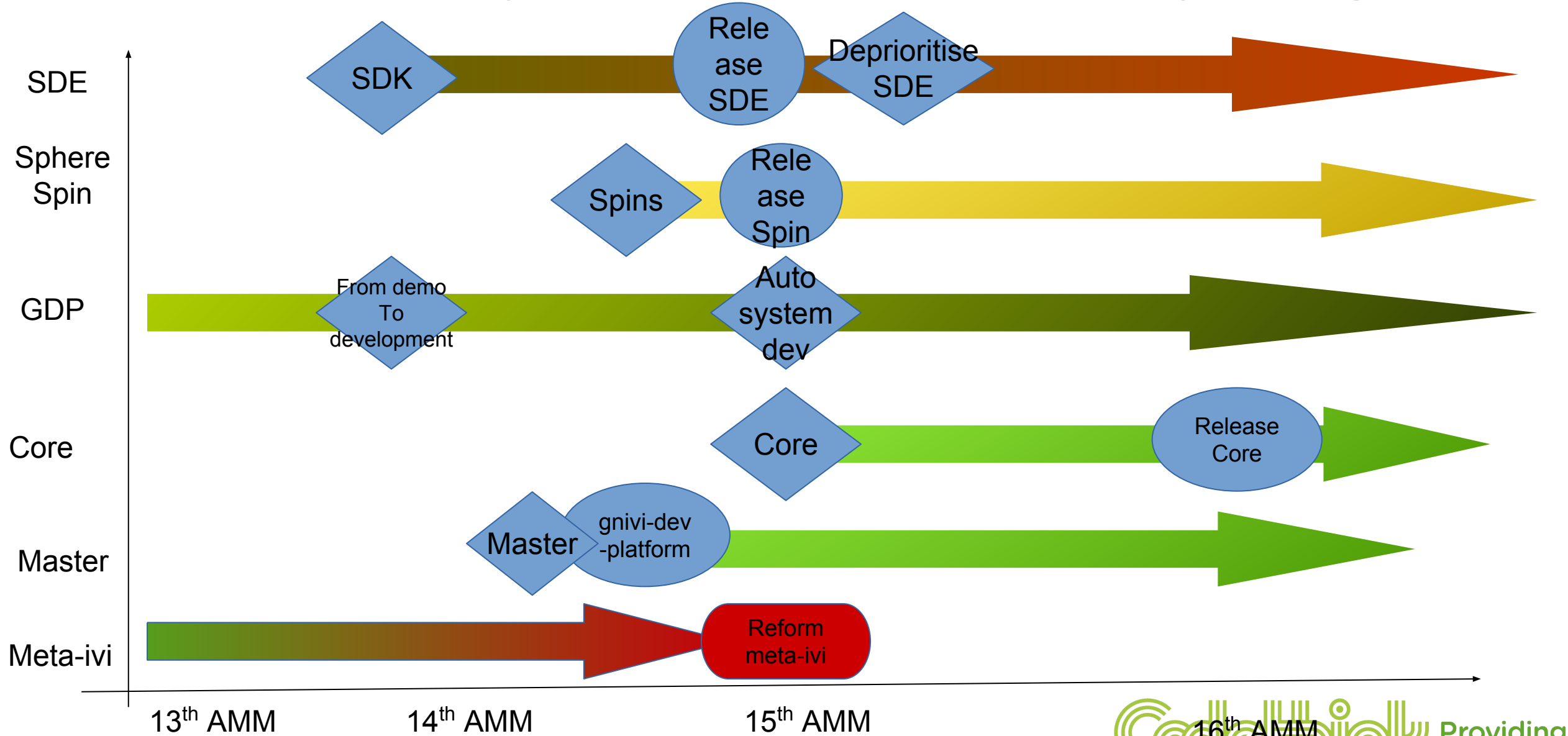
- Coordination with PMO, IT, Marketing and CEO at management level.
- Coordination with EGs at engineering level.
- Coordination with Members and community at per product level.

From GDP project to GENIVI delivery program

- Delivery team formed by release managers.
 - SDE requires also a development tools specialist.
- Total of five people.
 - One full time release manager per outcome.
 - Master + Code + GDP = 3 maintainers (FTE)
 - Devops engineer to support the portfolio delivery.
 - All four engineers work together in Master.
 - Project owner.

Roadmap

From GDP project to GENIVI delivery program



Decisions

1. Define system automotive developers as primary target group.
2. Switch current focus of GDP accordingly. De-prioritise SDE.
3. Separate meta-ivi from the compliance program. Merge the code part into GDP delivery program
4. Restructure GDP layers for easier maintenance and individual components consumption.
5. Define the initial requirements for Core system. Towards 16th

AMM

Infrastructure and service improvements

Deployment infrastructure

- Automated deployment.
 - Towards continuous deployment.
- p2p capabilities and mirroring.
- Public/private instance to control what is not ready to distribute.
- Analytic to comprehend binaries consumption.
- Steps forward towards reproducibility.

Sources mirroring

Mirror GENIVI sources (from Github and upstream) in GENIVI's infrastructure because:

- Increase reliability at building time.
- Compliance revision at commit stage to reduce overhead at validation stage.
- Increase build performance.
- Step forward towards reproducibility.
- Analytic to understand how source are consumed.

Build system

- Capacity increase.
- Differentiation between production quality builds and other builds.
- ACL capabilities.
- Trigger sources from GENIVI mirror.
- Parallelization.

Testing

- First stage: focus on acceptance testing:
 - Processes and tests first, initially through scripting.
 - Tests like patches approach.
- Second stage: focus on boot testing automation
 - Though kernelci.org for simple systems
 - Through openQA for full systems.
- Third stage: focus on production quality
 - Integrate automated tests.
- Compliance include specs, code and tests.

Other important improvements

- Increase download bandwidth to improve integrators efficiency.
- Get rid of unmaintained code.
- Limit PoC to Master for maturing.
- Improve flexibility in Master for customizations.

