



# Scaled agile deployment with SAFe<sup>®</sup> and Tuleap



Enlean, provider of Tuleap, recognized in the Gartner<sup>®</sup>  
Magic Quadrant<sup>™</sup> for Enterprise Agile Planning tools

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# Introduction

Some time ago, we presented you with the [e-book “Scaled agile: how to implement transformation”](#).

Written in collaboration with four experts in the field, its objective was to answer the big questions on an enterprise-wide scaled agile approach.

This white paper follows on from the first e-book and is much more specific in terms of proposing how the scaled approach might be deployed: “How to implement SAFe® with Tuleap.”

While there’s no ready-made recipe for implementing scaled agile, we offer templates, workflows, and tools to help you deploy the Scaled Agile Framework (SAFe®).

The 15th State of Agile Report, dating from 2021, highlights that among the top ten obstacles to the implementation of agile in an enterprise are:

- Inconsistent processes and practices across teams<sup>1</sup>
- Fragmented tooling and project-related data/measurements<sup>2</sup>

To overcome these barriers, it’s essential that teams are supported in collaborating and coordinating with each other by providing them with the necessary methods and tools. This is where Tuleap comes in.

As an enterprise-wide solution, Tuleap helps organizations and their teams tackle these two challenges. Tuleap enables processes to be standardized while still allowing each team to make the necessary adjustments for enhancing their efficiency. As an all-in-one software suite, Tuleap provides a range of complementary and integrated modules that meet the needs of both operational and management teams.

“ First barrier to the deployment of an agile approach: “Inconsistent processes and practices across teams” ”

| 15th State of Agile Report, 2021

<sup>1</sup> Translation of the original answer: “Inconsistent processes and practices across teams”

<sup>2</sup> Translation of the original answer: “Fragmented tooling and project-related data/measurements”

# Why SAFe® is the world's leading scaled agile framework

In this white paper, we have chosen to focus on implementation with SAFe®. Why?

“

While a wide range of scaling frameworks are in use, SAFe® is the most popular. 37% of respondents identifying it as the framework they most closely follow.

”

| 15th State of Agile Report, 2021

That's why the leaders of the largest private and public organizations have made it their priority. Being responsive to markets and aligning teams with the overall strategy has now become a critical factor for success.

SAFe® offers a range of benefits:

- SAFe® takes the best practices from the agile and lean approaches, with the aim of combining responsiveness, flexibility, and productivity;
- An enterprise-wide strategy that translates the high-level vision into operational projects. This addresses the concerns of every role in the business, from the management team to the development teams;
- Synchronicity, efficiency, and predictability of the project across the whole group thanks to Agile Release Train;
- Operational teams retain a certain degree of autonomy.

Once the suited culture for the organization is established, the tooling side becomes crucial.

“

A tool without a process is ineffective, while a process without a tool is inefficient<sup>3</sup>

”

| Laurent CHARLES, CEO of Enalean - Tuleap

<sup>3</sup> Effectiveness is the attribute that enables the expected results and to be achieved is directly linked to the notion of competence. Efficiency is an important term in an organization, as it is generally the thing that enables it to achieve profitability by ensuring a good quality of service.

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# SAFe®: a three-level method

The purpose here is not to simply explain or present the SAFe® framework. After all, the SAFe® framework is defined in great detail on the Scaled Agile website: [www.scaledagileframework.com](http://www.scaledagileframework.com).

However, it's important to remember that SAFe® is structured around three interrelated levels:

- The Portfolio level. It is at this level that the business strategy and investment strategy are brought into line.
- The Large solution level. This level includes practices for developing the most important applications, which involve a large number of people and roles.
- The Essential level. This is the basis of SAFe®. It contains the program in which the Agile Release Train (ART<sup>4</sup>) is managed. This level also includes the Teams, autonomous agile teams that are responsible for the development processes. The synchronization and consistency of the developments is ensured by an Agile Release Train.

The illustration below summarizes the key concepts of SAFe®.

<sup>4</sup> Pour les détails, voir [le lexique sur la terminologie SAFe®](#).

## PORTFOLIO SAFe

### MANAGED ITEMS

- SAFe Epics

### MILESTONES

- Program Increment (PI)
  - Iterations

1 PI ≈ 5 iterations ≈ 10 weeks

### ROLES

- Epics Owners
- Enterprise archi

## LARGE SOLUTION SAFe



### MANAGED ITEMS

- SAFe Capabilities and Solutions Enablers

### ROLES

- STE
- Solution management
- Solution archi

## ESSENTIAL SAFe

### Agile Release Train & Program



40-150 people

### MANAGED ITEMS

- Features
  - Program Enablers

### MILESTONES

- Program Increment (PI)
  - Iterations

1 PI ≈ 5 iterations ≈ 10 weeks

### ROLES

- Business Owner
- RTE
- Product management
- System archi

### Team



5-10 people/team

### MANAGED ITEMS

- User Stories
  - Tasks
- Team enablers
- Bugs

### MILESTONES

- PI
  - Iterations or Sprint

1 iterations ≈ 2 weeks

### ROLES

- Product Owner
- Scrum Master
- Developer

The different levels of the SAFe® framework

# Tuleap, an enterprise solution for scaled agile deployment

Before explaining how to implement SAFe® with Tuleap, it's important that we introduce or recall some of the principles underlying Tuleap.

If you are already familiar with Tuleap, you can go directly to the next chapter.

## ...with a solution designed for the enterprise

Tuleap is a software application that equips businesses and their teams for their agile development, regardless of their size and the methods they choose to use. Whether SAFe®, Scrum of Scrums, LeSS, Lean, or other approaches, Tuleap supports the key concepts, practices, and metrics needed to enable your organization to deploy agile on a large scale.

A Tuleap server can host tens of thousands of people and thousands of what are termed “workspaces.”



## Tailor-made workspaces for autonomous teams

A Tuleap server can bring together dozens, hundreds, or thousands of identical, similar, or completely different workspaces.

A Tuleap Workspace is a collaborative environment that brings together people with complementary skillsets who work together to develop a software product or component. This workspace is the place where the product lives—the shared point of reference for everyone. All of those involved, regardless of their roles, specializations, or responsibilities, will find the information and tools they need.

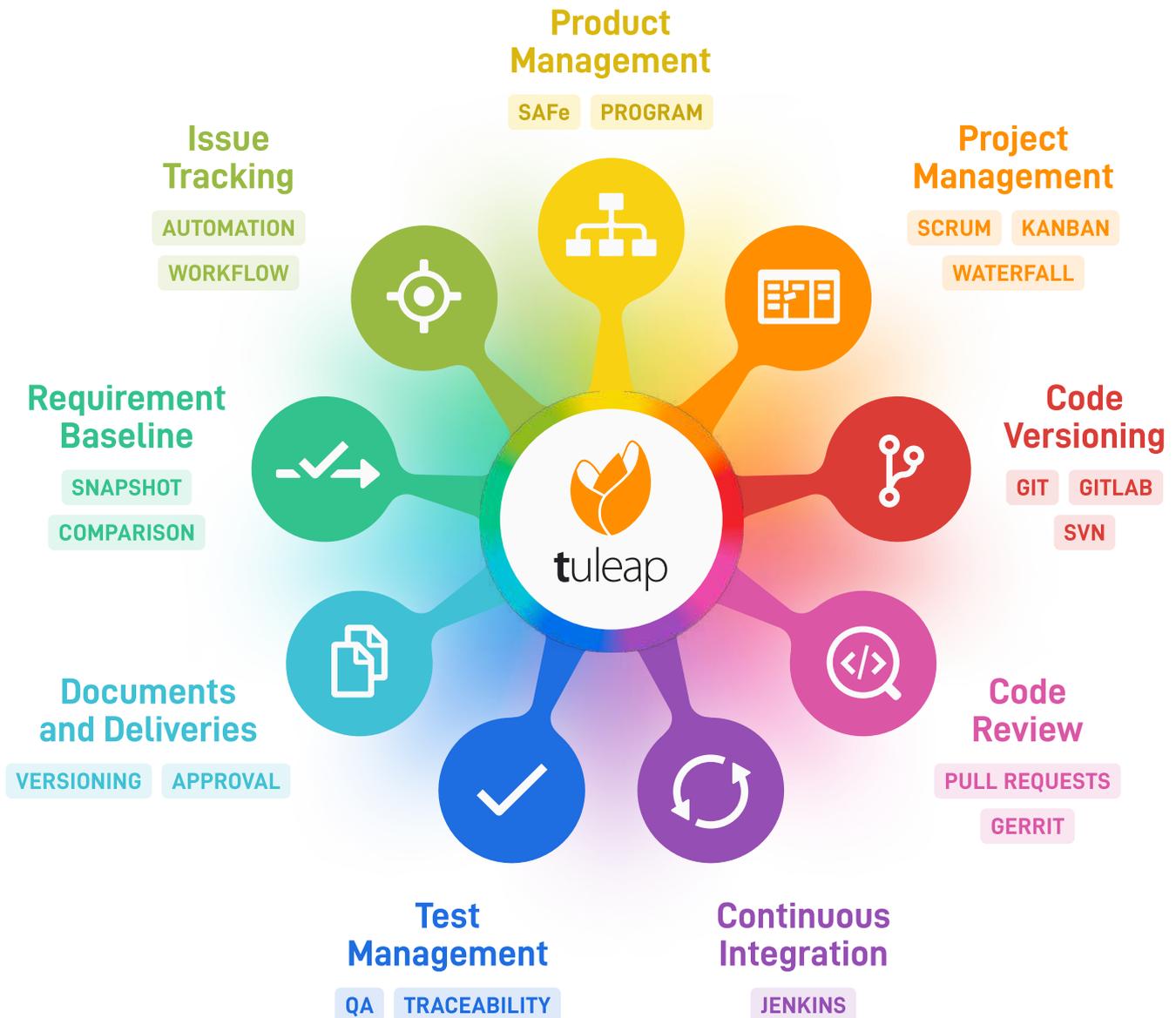


A Tuleap = men and women + tailor-made tools

# An all-in-one solution that meets SAFe® objectives

Tuleap is an integrated solution for Agile and DevOps. Tuleap provides all the tools and features that both technical and non-technical teams need to collaborate on, develop, and deliver high-quality software.

These are the various features and connectors that integrate natively into Tuleap. Each team, in its own workspace, chooses its tools and connectors, and configures them according to its needs.



# SAFe® 5 coverage with Tuleap

Tuleap is a highly configurable solution, with a number of customization options. All the elements presented in this white paper are taken from a Tuleap configuration. This allows us to propose a simple and sufficient implementation of SAFe® in most cases, while still respecting the model outlined in the SAFe® framework.

All of the workflows, workspaces, and artifacts<sup>5</sup> offered can be adapted by organizations to reflect their specific business units, processes, and terminology as closely as possible.

<sup>5</sup> The term “Artifact” refers to any type of activity or work item. These can be “Features,” “Epics,” “Tasks,” “Bugs,” and so on.



With reference to the diagram above, these five points explain how Tuleap facilitates the deployment of SAFe®.

## 1 Agile transition

SAFe® objectives	Tuleap enables you to
<ul style="list-style-type: none"><li>• Become an agile organization</li><li>• Promote cross-functional collaboration within your business</li></ul>	<ul style="list-style-type: none"><li>• Ensure that a remotely accessible <b>single enterprise repository</b> is provided for everyone and by everyone.</li><li>• Deliver an <b>all-in-one solution using agile management and DevOps tools</b> that adds continuous value</li><li>• Create <b>multi-profile teams</b> with complementary skills and perspectives</li></ul>

## 2 Sharing the vision

SAFe® objectives	Tuleap enables you to
<ul style="list-style-type: none"><li>• Share the vision, business strategy, and roadmap</li><li>• Provide a global overview of the results and metrics</li><li>• Make work visible in real time so that projects can be synchronized</li></ul>	<ul style="list-style-type: none"><li>• <b>Align teams</b> with the organization's overall objectives</li><li>• Create shared <b>dashboards</b>, ranging from a global one for an overall view to a highly detailed one</li><li>• Monitor in <b>real time</b> progress made with regard to projects, blocking points, urgent tasks, and customer feedback</li><li>• Share data, deliverables, documents, and so on in a <b>secure and controlled way</b></li></ul>

### 3 Customer centricity

SAFe® objectives	Tuleap enables you to
<ul style="list-style-type: none"><li>Implement an agile, customer-centric approach to defining, building, and delivering a continuous flow of products and services to end users</li></ul>	<ul style="list-style-type: none"><li><b>Collaborate on environments shared</b> by all of the participants in agile teams (business analysts, product owner, Scrum Masters, developers, customers, partners, suppliers, etc.)</li><li>Provide teams with tools to <b>promote good practice</b> in Scrum, Kanban, mixed, or hybrid approaches</li><li><b>Adapt</b> to the agility of teams and manage both hardware and software projects thanks to the highly configurable nature of the software</li></ul>

### 4 Best DevOps practices

SAFe® objectives	Tuleap enables you to
<ul style="list-style-type: none"><li>Apply best practices in DevOps</li></ul>	<ul style="list-style-type: none"><li><b>Provide an integrated and automated DevOps string</b> consisting of the Git version manager, pull requests, or use of the Gerrit tool for code reviews, and Jenkins and GitLab integration.</li><li>Implement a <b>continuous validation and compliance process</b></li></ul>

### 5 Built-in quality

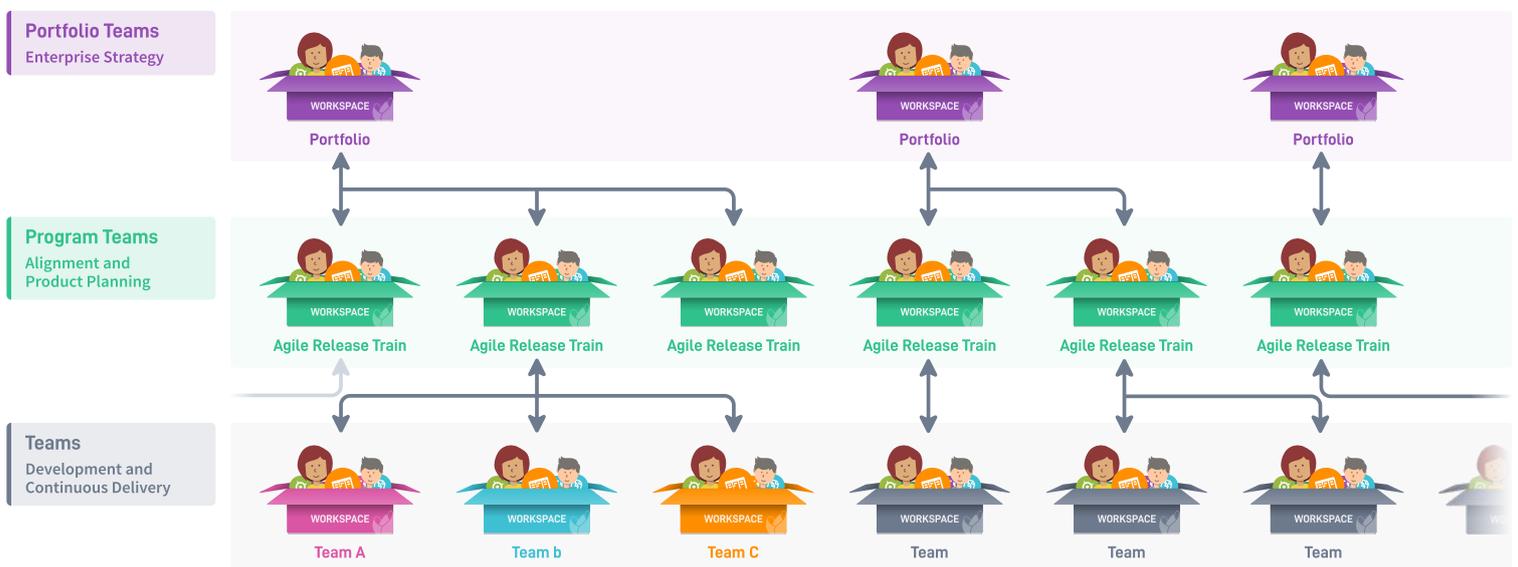
SAFe® objectives	Tuleap enables you to
<ul style="list-style-type: none"><li>Develop high-quality products</li><li>Foster regular, quality-led, customer-centric deliveries</li></ul>	<ul style="list-style-type: none"><li>Implement a <b>continuous quality assurance strategy</b> involving testing plans and testing campaigns related to releases and requests</li><li>Achieve <b>full traceability</b> throughout the project lifecycle to guarantee compliance</li><li><b>Automate reporting to facilitate compliance audits</b> with regard to standards and norms</li></ul>

# Deploying SAFe® with Tuleap: aligning objectives, teams, and work

## The hierarchy of workspaces in Tuleap

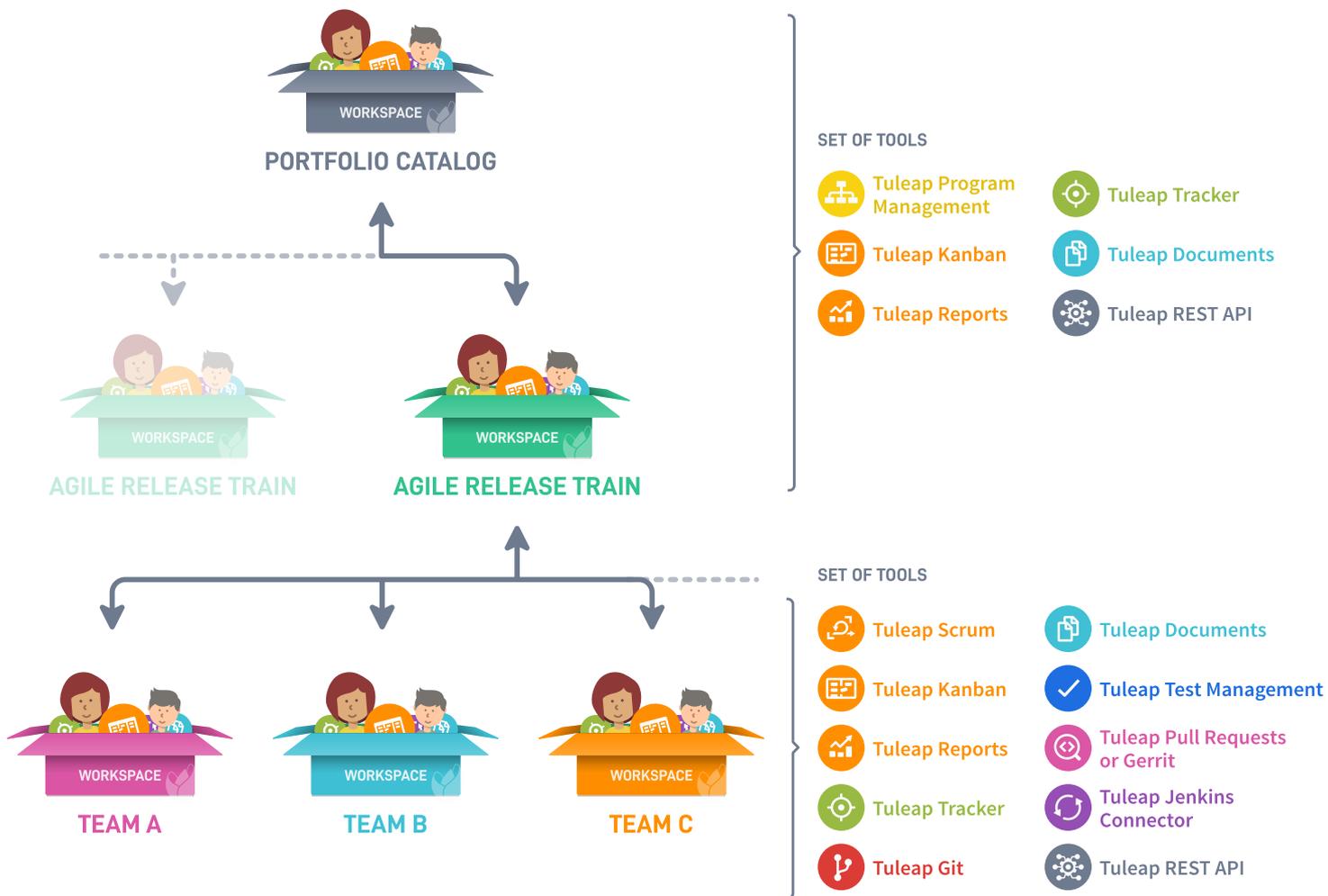
Teams collaborate in autonomous workspaces that can be connected to each other both vertically, of course, (in terms of the portfolio, ART, or teams) and horizontally (across ARTs or teams).

Each portfolio can have its own configuration with one or more ARTs, which involve several teams themselves.



# The Tuleap modules and tools to be used

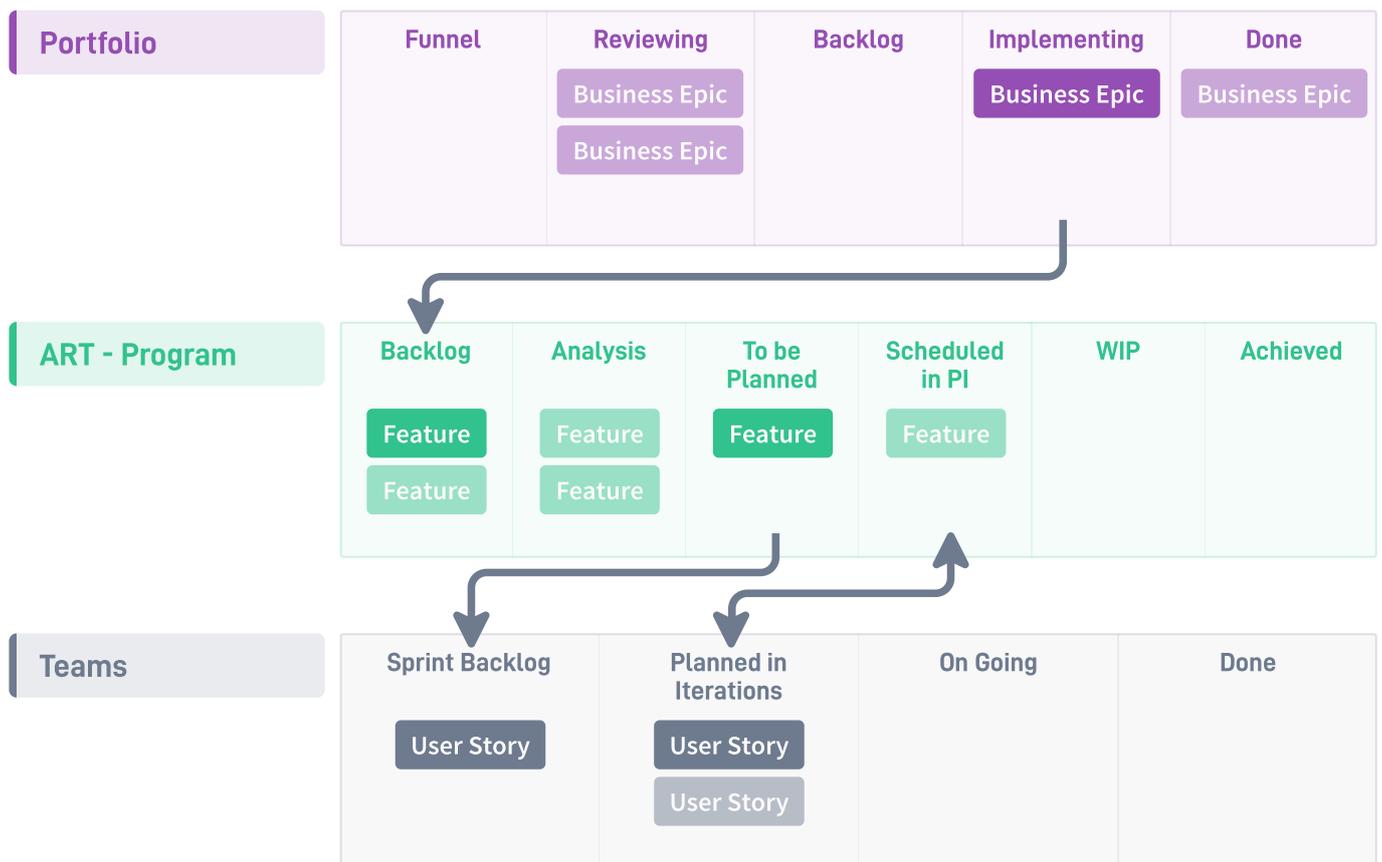
As mentioned, each workspace is customizable and can use one or more of the modules supplied in Tuleap. Here are the ones we suggest using in accordance with the SAFe®-specified levels.



# A proposal for a simplified workflow across SAFe® levels

To implement the agile best practices seen above, let's now visualize the processes involved in a real-life organization. Imagine creating a new software solution.

Here is how a new product comes to life, from the initial concept and business analysis at the SAFe® Portfolio level, to its incremental schedule within the program and its gradual development by the teams.



# Tuleap templates for SAFe®

To facilitate the deployment of SAFe®, Tuleap offers project templates. They are useful for:

- Deploying enterprise-wide agile approaches across dozens or even hundreds of teams;
- Effectively managing a broad portfolio of solutions and aligning multifunctional teams;
- Ensuring that the deliveries of the different teams are integrated, verified, and validated by all of the stakeholders of a specific project;
- Coordinating the development of technological products composed of embedded systems, including both hardware and software systems.

## Three ready-to-use templates

Tuleap offers three complementary templates to facilitate the implementation of the scaled agile approach at team level and more generally across an organization, using the SAFe® methodology:

- Tuleap template for the SAFe® Portfolio level
- Tuleap template for the SAFe® Essential Level - Agile Release Train
- Tuleap template for the Essential SAFe® Level - Scrum Team

The diagram illustrates the relationship between three SAFe templates. At the top, the 'SAFe® - Portfolio' template is shown, which manages a set of applications and products into a portfolio to align strategy to execution. Below it, the 'Essential SAFe® - Agile Release Train' template is shown, which aligns several teams to a shared mission applying the principles of the Essential SAFe®. At the bottom, the 'Essential SAFe® - Scrum Team' template is shown, which helps cross-functional teams to deliver an increment of value based on Scrum approach. The diagram indicates that the Portfolio template is used with the two Essential SAFe templates, and the Scrum Team template is used with the Agile Release Train template.

**SAFe® - Portfolio**  
Manage set of applications and products into a portfolio to align strategy to execution. This template has to be used with the 2 Essential SAFe templates.

**Essential SAFe® - Agile Release Train**  
Align several teams to a shared mission applying the principles of the Essential SAFe®. Manage Agile Release Train, Program Increments and Roadmap. This template has to be used with the Tuleap template "Essential SAFe® - Scrum Team"

**Essential SAFe® - Scrum Team**  
Helps cross-functional teams to deliver an increment of value based on Scrum approach. This template has to be used with the Tuleap template "Essential SAFe® - Agile Release Train"

## SAFe® Portfolio template

This Tuleap template helps establish and maintain consistency between the strategy and its execution throughout the enterprise, promoting the alignment of multifunctional teams not only with the organization's objectives but also its mission. Furthermore, this is done while implementing SAFe® values and principles. While this template is already powerful on its own, it's when you use it in conjunction with the SAFe® Essential Tuleap template that you'll fully benefit from its potential:

- Sharing the vision encapsulated both in the portfolio of solutions and the shared set of objectives,
- Managing the portfolio backlog and epics,
- Viewing the progress status of epics and Agile Release Trains (ARTs) via the Portfolio Kanban.

## Essential SAFe® template — Agile Release Train (ART)

This Tuleap template helps multiple teams align with the organization's vision and mission through the application of principles of the Essential Scaled Agile Framework®:

- Managing Agile Release Train teams,
- Scheduling program increments,
- Viewing functionalities at the level of the inter-team backlog,
- Customizing and adapting Kanban workflows and dashboards to fit the ART's way of working,
- Viewing the product roadmap in real time,
- Managing the Agile Release Train artifacts as features or enablers.

## Essential SAFe® template — Scrum Team

This Tuleap template helps multifunctional teams define, develop, test, and deliver incremental value by reducing lead times. It represents a ready-to-use workspace within Tuleap based on the Scrum method and linked with the Agile Release Train defined above and the program increments:

- Managing the iteration schedules,
- Organizing the backlog at team level,
- Dividing features into user-stories and storing all team artifacts,
- Designing testing plans as early as possible to ensure software quality.

At any time, of course, it's possible to adapt the configuration of these templates to the specifics of your organization and its teams..

# SAFe® Portfolio with Tuleap

The SAFe® Portfolio level aligns the organization’s vision with its investment strategies and enables solution or software product portfolios to be defined that contain business epics and epics enablers.

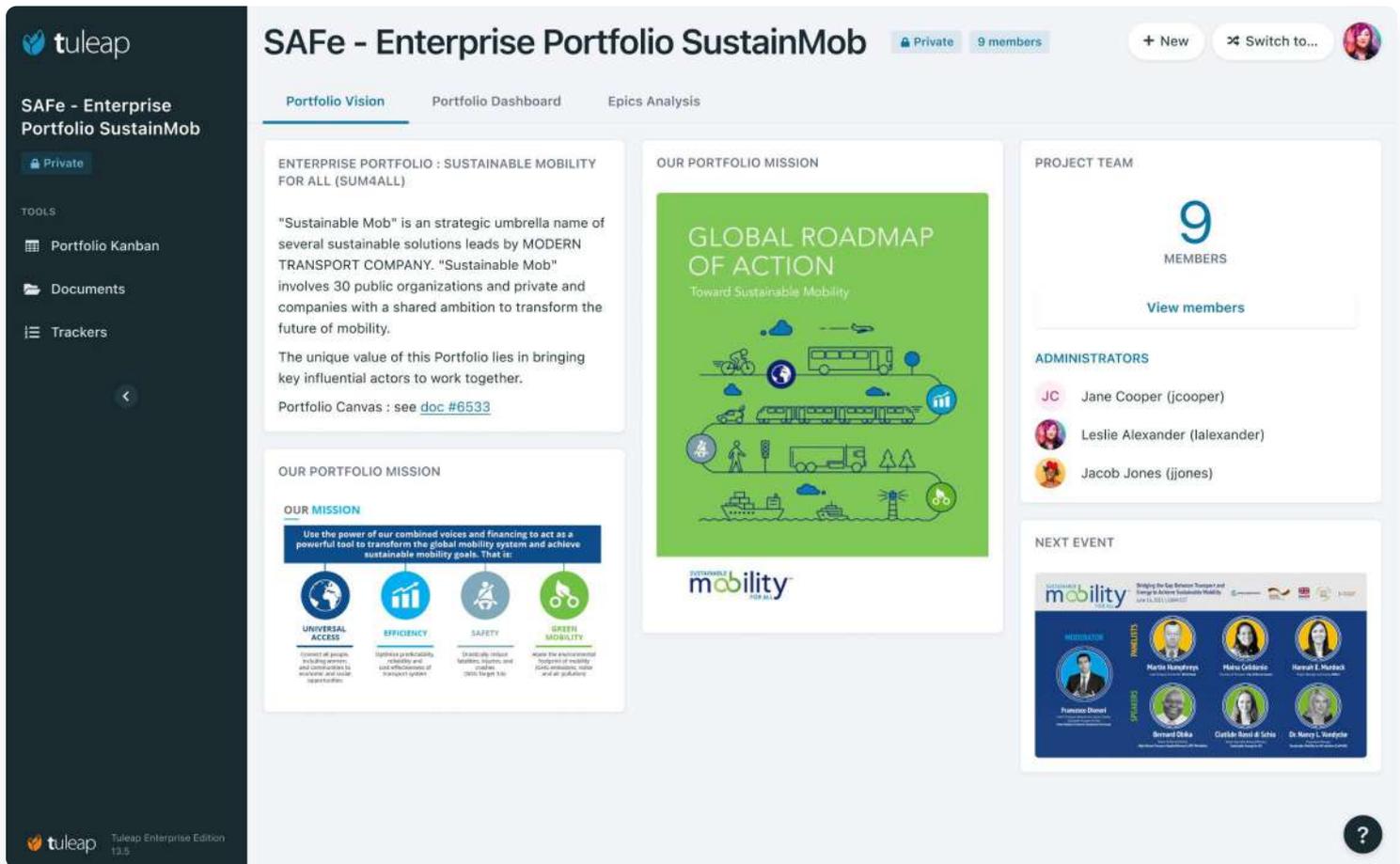
The portfolio team includes roles with the highest level of governance:

- the “Lean Portfolio Management” (LPM) level, encompassing individuals with the highest possible decision-making and budgetary authority. It is this group of leaders that aligns the execution with strategy and organizes the development process around the value streams,
- the “epic owners” who are responsible for coordinating the epics associated with the portfolio, in particular using the Kanban Portfolio,
- the “enterprise architects” who provide technical guidance through the ARTs and disseminate best practices.

In order to collaborate on and share the strategic directions of the enterprise, the Portfolio team creates one or more workspaces in Tuleap that may include the following:

# Vision Portfolio and Canvas Portfolio

The purpose of a portfolio workspace dashboard, as shown below in Tuleap, is to communicate the organization's Vision Portfolio more widely. The Canvas Portfolio, a more detailed document, prepared with the Tuleap Document Manager, describes the purpose and elements of the portfolio, its current and future state and creates epic-related assumptions to feed into the vision, differentiate budget approaches, and thereby build the Kanban Portfolio.



Sharing the Portfolio Vision and the Canvas Portfolio

## Epic Portfolio

At this level the Epic Portfolio will be studied. This constitutes a major initiative derived from the organization's strategic themes. Before their development, epics should be subject to evaluation in the form of business cases and budget validation. Once prioritized, epics are implemented by means of value streams, mostly in a series of ARTs.

There are two types of epics: business epics—development initiatives with added business value—and enabler epics, the activities needed to get architectures up and running to create the functionalities needed in the future. To analyze epics and formalize the pitch for a solution project, an adaptation of

Alexander Osterwalder's "Business Model Canvas," in the form of an epic hypothesis statement, is often used.

In its SAFe® Portfolio template, Tuleap provides an example sheet for managing Epic Portfolios. This includes with the following elements. You can, of course, customize this configuration so that it matches your business expectations more closely.

- Type of epic: business or enabler
- Epic hypothesis statement
- Epic owner
- WSJF (Weighted Shortest Job First) and importance
- Business outcomes and leading KPIs
- Key stakeholders
- Non-functional requirements (NFRs)
- Estimated costs (MVP, supplier-related costs, implementation costs)
- Progress (status, start date, forecast date)

The screenshot shows the Tuleap interface for an Epic titled "Autonomous Car - V1". The interface is divided into a sidebar and a main content area. The sidebar on the left contains the Tuleap logo, the user's role "SAFe - Enterprise Portfolio SustainMob", and navigation options like "Private", "TOOLS", "Portfolio Kanban", "Documents", and "Trackers". The main content area displays the details of the Epic, including the "Epic Hypothesis Statement" section with fields for "Epic Name", "Epic Description (value statement)", "Type of Epic", "Epic Owner", and "WSJF". Below this is the "Progress" section with fields for "Start date", "Target end date", "Status", and "Importance".

Field	Value
Epic Name	Autonomous Car - V1
Type of Epic	Business Epic
Epic Owner	Sébastien ROMANET (sromanet)
WSJF	25
Start date	2021-09-01
Target end date	2022-12-01 (326 working days)
Status	Implem-Persevere
Importance	High

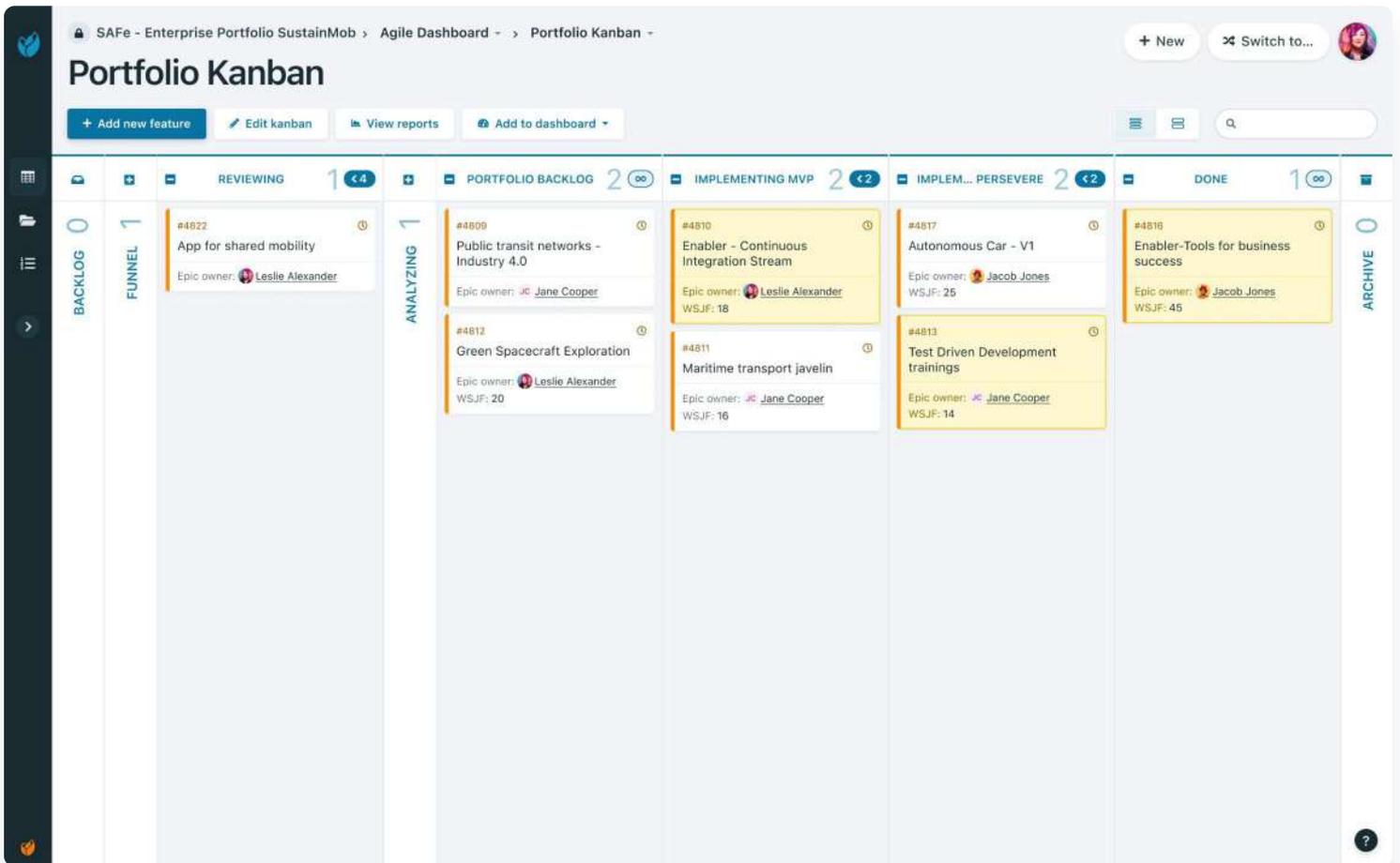
Value Statement du Business Epic "Autonomous Car - V1"

# Kanban Portfolio

The Kanban Portfolio is the dashboard used to visualize, manage, and analyze the prioritization and flow of epics and enablers, from their conception to their realization and completion. Easy to use, the Kanban Portfolio within Tuleap will be the focus of your organization’s prioritization.

The aim here is to:

- evaluate, measure, and prioritize the epics that will have the greatest impact on your results and your customers’ satisfaction levels,
- synchronize your activities and monitor the progress of epics and their progress within the ARTs,
- identify potential bottlenecks in the process and eliminate them so that activities can progress with optimal efficiency.



Kanban for a SAFe® Portfolio

# Roadmap Portfolio

In Tuleap, the Roadmap Portfolio is the graphical representation that allows the senior management team to communicate and share the strategic intention of developing portfolio solution deployments.

Taking a high-level view, the roadmap provides a forward-looking perspective on both product delivery and potential dependencies; with a more detailed view, the progress of each ART can be monitored.



SAFe® Portfolio Roadmap

# Essential SAFe® with Tuleap

Essential SAFe® is considered to be the core of the framework and is often the starting point for implementation. This section outlines some specific approaches for implementing Essential SAFe®. The aim is to enable a rapid and systematic launch of SAFe® Essential as a first step.

## Tuleap hierarchy and tools

The objective is to set up a workflow with Tuleap for organizing and synchronizing activities at the

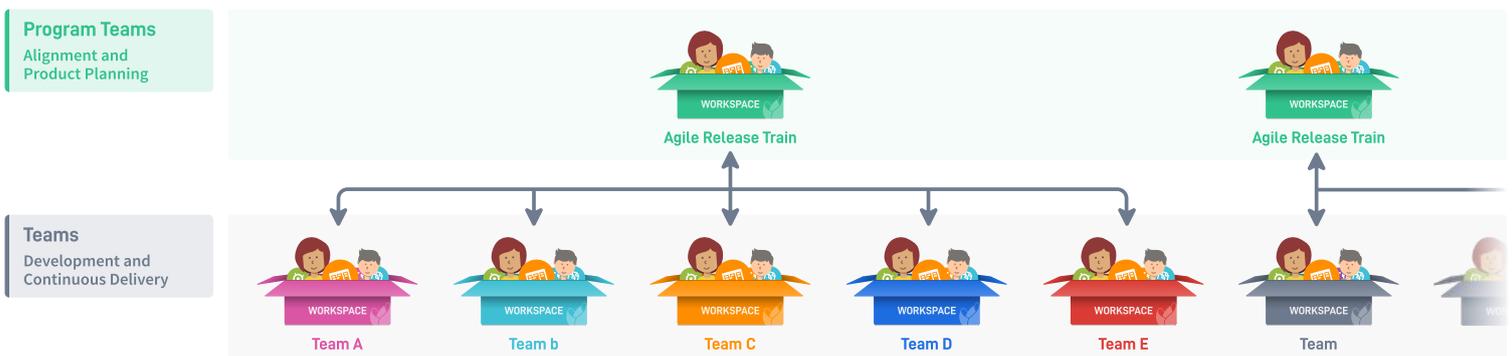


Tuleap aligns the teams around the customer product

Agile Release Train level.

Here is a template for organizing your workspaces within Tuleap in order to implement an Agile Release Train:

- A program workspace, in which the Agile Release Train is managed;
- A number of team workspaces in which each team manages the issues that concern it. In our example, the teams are working as Scrum teams.



# Essential SAFe® - ART with Tuleap

The Agile Release Train (ART) is the key to ensuring that all teams work together to achieve a common goal. The ART coordinates a set of agile teams over an extended period. The teams involved develop and deliver solutions incrementally. The ART aligns the teams on a shared technological and business mission by using a series of fixed-length iterations within a time frame known as a Program Increment (PI).

The Train is managed in a single dedicated workspace with the following Tuleap features:

Tuleap features	Use
Tuleap Product Management	<ul style="list-style-type: none"><li>• Bringing teams onto the ART</li><li>• Creation of the program backlog and synchronization of features and stories with the team level</li><li>• Creation of PIs and synchronization at team level in the sprint schedules</li><li>• Scheduling the planning increments, including the associated content, and synchronization with the team level</li></ul>
Tuleap Roadmap	<ul style="list-style-type: none"><li>• Monitoring the development schedule for the features</li><li>• Monitoring the progress of stories</li><li>• Viewing dependencies</li></ul>
Tuleap Kanban	<ul style="list-style-type: none"><li>• Monitoring the maturity of features and enablers</li></ul>
Tuleap Tracker	<ul style="list-style-type: none"><li>• Management and tracking of changes to features and enabler features</li><li>• Using trackers to create reports</li></ul>
Tuleap Dashboards	<ul style="list-style-type: none"><li>• Creation of reports on the schedule and the status of each PI, such as: the Program Kanban, status of the PI underway, and so on.</li></ul>
Tuleap Documents	<ul style="list-style-type: none"><li>• Drafting and storage of program documents such as PI objectives, minutes of meetings, etc.</li></ul>

Using the template provided by Tuleap, this is what a workspace for an Agile Release Train looks like:

The screenshot displays a Tuleap workspace for 'Autonomous Car ART'. The interface includes a sidebar with navigation options like 'Program Management', 'Agile Dashboard', and 'Trackers'. The main area is divided into three sections:

- Product Roadmap:** A Gantt chart showing progress for features like 'Satellite position handling' (48%), 'Reduce speed to 30km/h inside cities' (57%), 'Have a panel with option for global navi...' (100%), 'Use the altimeter to enable the mountai...' (64%), and 'Look at npm modules with GPS in their...' (97%).
- Synchronized teams:** A list of team assignments for various tasks, including Team Autopilot, Team Bogota, Team EV Engine, and Team London.
- Program Kanban:** A board with columns for 'ANALYSIS', 'TO BE PLANNED', 'SCHEDULED', 'WIP', 'DEPLOYING', 'LEASING', and 'ARCHIVE'. Items include 'Blindspot detection', 'Adaptive Cruise Control', 'Charge batteries with solar panels', 'Reverse Park Assist', and 'Lane-Keeping Assist'.

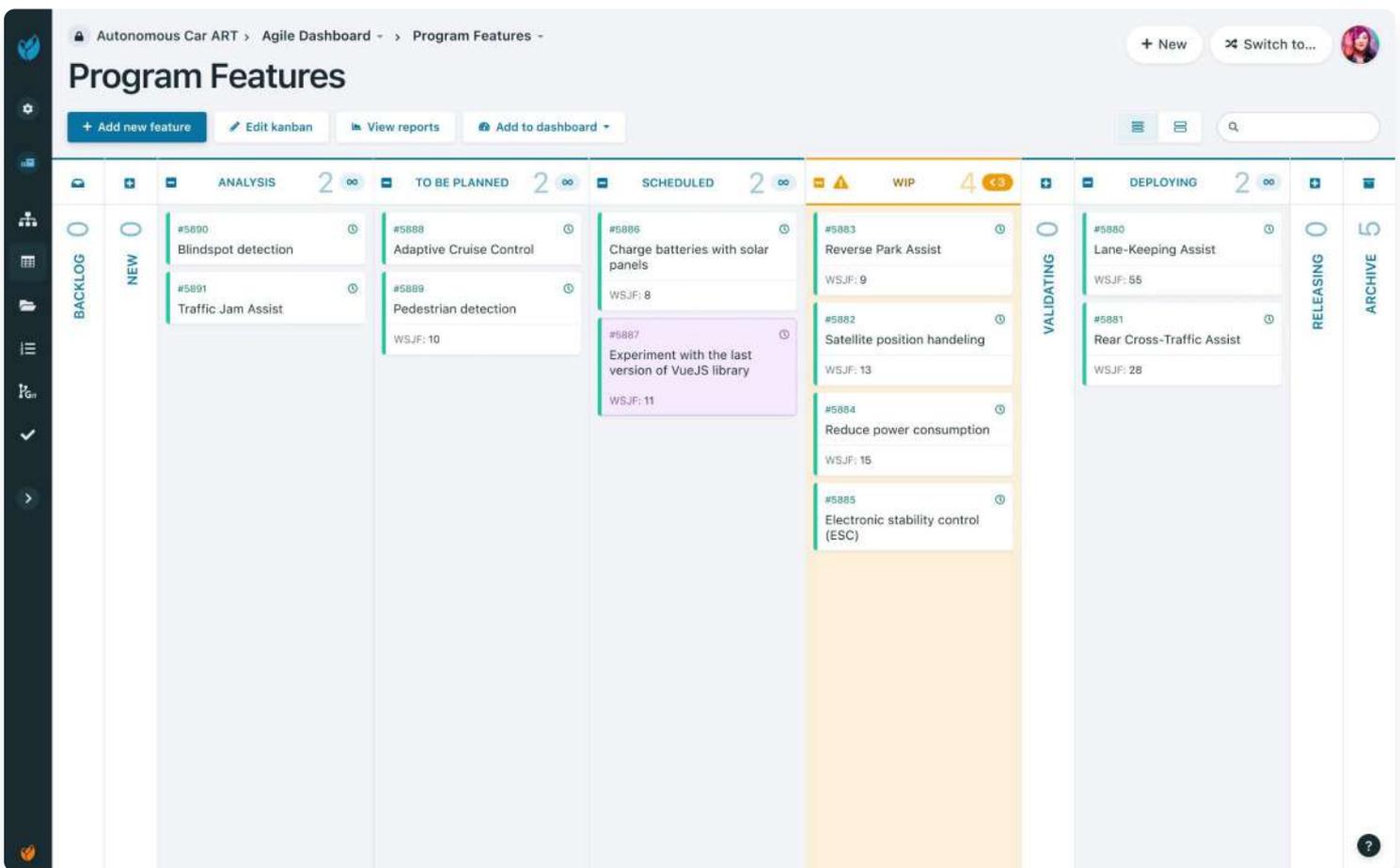
# ART teams

The ART workspace provides a consolidated view of the Train’s objectives and the work to be carried out. It has its own data and aggregates information from the Scrum teams. The organization that was set up for this ART is based on the Tuleap SAFe® templates. The ART in this example aligns four teams that have their own specific characteristics and areas of expertise:

- Agile Release Train: Autonomous Car
  - Team Auto Pilot
  - Team Bogotá
  - Team EV Engine
  - Team UK

## Program Kanban

As a preferred tool of the RTE (Release Train Engineer), the Program Kanban enables the flow of features and program enablers to be managed and optimized. The Kanban allows potential bottlenecks to be identified and also facilitates the ART sync meetings (when the Scrum Masters and Product Owner synchronize their activities).

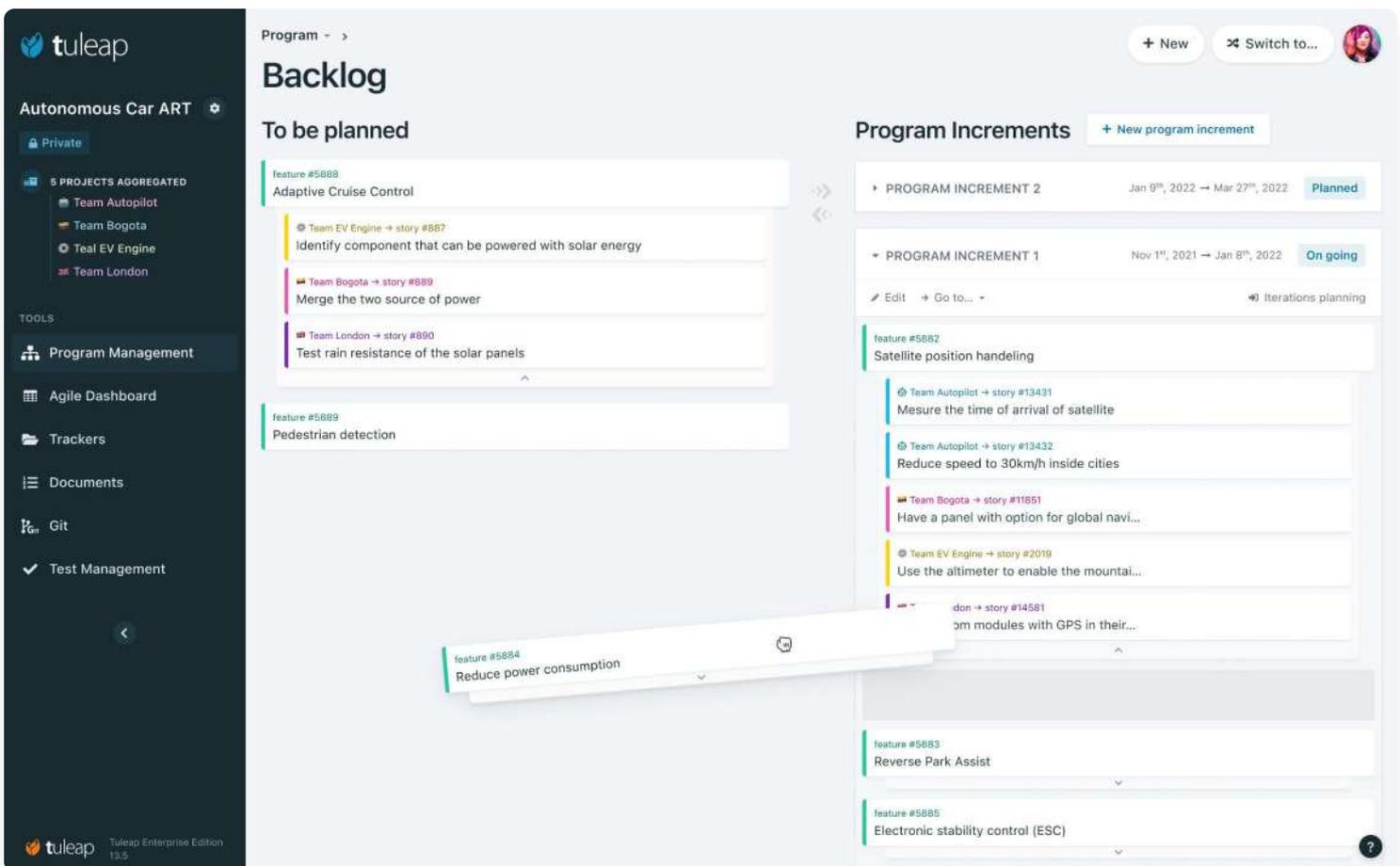


Program Kanban for tracking features and enabler features

# Program Increment (PI) and PI planning

PI Planning is probably the most important SAgile® event. PI Planning often takes place over several days, as far as possible on a face-to-face basis. However, we have also got used to working remotely following recent periods of enforced working from home. The PI Planning event aligns all of the ART teams with the vision and objectives for a duration of eight to twelve weeks or four to five sprints.

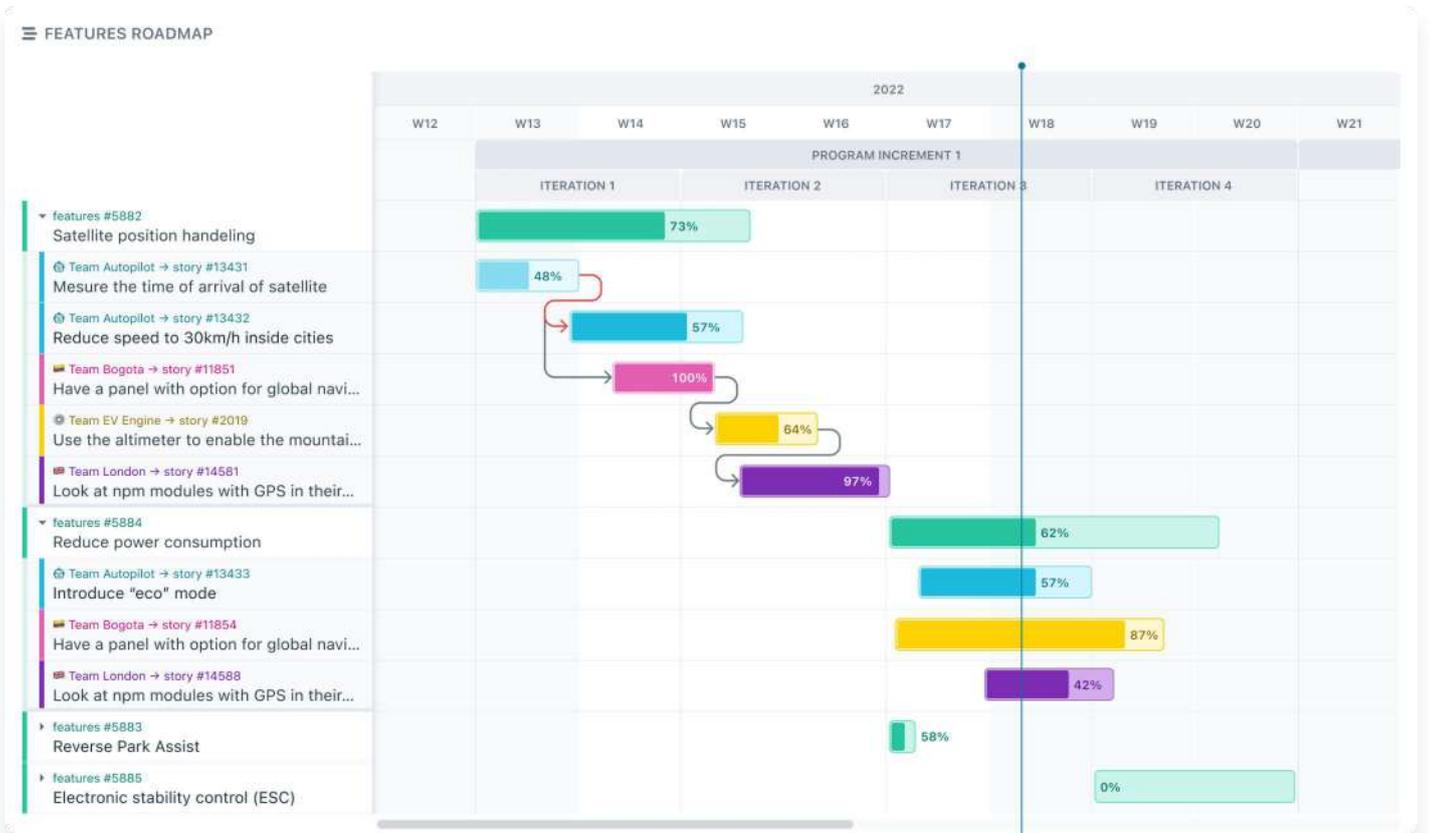
During PI Planning, the RTE (Release Train Engineer) and the teams gather around the Tuleap ART workspace to plan their work together. Program Increments are created at the ART level and automatically replicated at the Teams level. The teams can then discuss and share these and plan their own iterations.



Program planning for Program Increment management

# Program Roadmap

The chart allows you to track the schedule for the features and how they are subdivided into stories, as well as the relevant dependencies.



Program Roadmap showing the progress of features and any dependencies

# Essential SAFe® - Team with Tuleap

An ART team is a multidisciplinary team, mostly of 5 to 10 people who have the skills and authority to define, build, and test certain elements of the solution value, all within a short iteration period. In particular, the SAFe® Agile Team integrates the dev team, Scrum Master, and Product Owner roles.

Depending on the profile and needs of the teams involved, the following features are found in each workspace of every team:

Tuleap features	Use
Tuleap Kanban	<ul style="list-style-type: none"><li>• Subdividing features into stories</li><li>• Monitoring the maturity of user stories and enablers</li></ul>
Tuleap Scrum	<ul style="list-style-type: none"><li>• Planning and monitoring the progress of sprints</li></ul>
Tuleap Tracker	<ul style="list-style-type: none"><li>• Managing and monitoring changes to stories, tasks, and bugs, etc.</li><li>• Using trackers to create reports</li></ul>
Continuous development chain (Tuleap Git and pull requests, GitLab, Jenkins, and Gerrit integration)	<ul style="list-style-type: none"><li>• Automation of pipeline versioning—build-test-release</li><li>• Source code management with Git at scale</li><li>• Code review for approving or rejecting pre-merge changes to the code</li><li>• Continuous build and integration to detect anomalies as early as possible</li><li>• Advanced automation with REST API and webhooks</li></ul>
Tuleap Test Management	<ul style="list-style-type: none"><li>• Creation of testing plans by iteration (or sprint)</li><li>• Launching manual and automatic test campaigns</li><li>• Monitoring test coverage levels for each story</li></ul>
Tuleap Dashboards	<ul style="list-style-type: none"><li>• Creation of reports by team, by profile (PO, dev, QA, etc.), by client, by theme</li></ul>
Tuleap Documents	<ul style="list-style-type: none"><li>• Management of team documents, such as the summary of retrospectives, sharing of good practices, documentation on standards to be adhered to in the project, client use case videos, etc.</li></ul>

**Brainstorming App** | Public | 28 members

Welcome | Issues | Roadmap | Team Retrospectives

**EPICS TYPES**

- Simple: 18%
- Stratified: 22%
- Systematic: 14%
- Convenience: 24%
- Quota: 1%
- Cluster: 2%
- Multi-stage: 10%
- Non-probability: 8%

**EPICS STATUS BY PERSONA**

Persona	Open	Closed
Admin	~5	~10
User	~15	~20
Manager	~10	~15
QA	~5	~10
Adv. User	~5	~25

**BRAINSTORMING APP MILESTONES**

**ROADMAP**

- 381 items in the project backlog, 3 upcoming releases

**WHAT'S HOT**

**Release 1.0** | 2019 Nov 04 → 2019 Nov 28 | 4 days to go | 8 days to go

- 3 Sprints | Capacity: 34 | Initial effort: 40
- 6 User stories
- 13 Bugs
- 2 Spikes

**Release 0.9** | 2019 Nov 04 → 2019 Nov 28 | 454 tests | 37 pts done

- 4 Sprints | Capacity: 28 | Initial effort: 26
- 4 User stories
- 8 Bugs

**HEARTBEAT**

**NEW**

- Liam Sonny pushed 1 commit on cloud/stable.
- story #39 Print my invoice after checking out has been updated by Sonny B. Williamson.
- John Dude created acomponents.md in draft-documentation folder.
- Liam Sonny pushed 3 commits on cloud/stormy.
- bug #1059 Cannot change password in Chrome nor Firefox has been created by Sonny B. Williamson.

**YESTERDAY**

- Lisa Van Derkraut pushed 2 commits on 3rd/rest.
- story #39 Print my invoice after checking out has been updated by Sonny B. Williamson.
- Lisa Van Derkraut pushed 2 commits on 3rd/rest.
- story #39 Print my invoice after checking out has been updated by Sonny B. Williamson.

"Team Bogotá" dashboard linked to the Autonomous Car ART

**Program Increment 1** | Agile Dashboard > Top Backlog Planning > Program Increment 1 >

Overview | Iterations Planning | Tests | Taskboard

You are in the context of the program Autonomous Car ART

**To be planned** | Add an item

- Issue #16184: Remove the last free-hand drawing view

**Milestones** | Add a sprint

- ITERATION 4 | Apr 18, 2022 → Apr 22, 2022 | Planned
- ITERATION 3 | Apr 11, 2022 → Apr 15, 2022 | Planned
- ITERATION 2 | Apr 4, 2022 → Apr 8, 2022 | Planned
- ITERATION 1 | Mar 28, 2022 → Apr 1, 2022 | On going

Capacity: 23 | Initial effort: 16 | Overview | Taskboard

story #13432: Reduce speed to 30km/h inside cities | Autonomous Car ART | Satellite position handling | 6

story #15431: Measure the time of arrival of satellite | Autonomous Car ART | Satellite position handling | 12

Issue #16179: Bump vue-gettext to v2.1.10

Iteration Planning for "Team Autopilot" linked to the Autonomous Car ART

The screenshot shows the Tuleap Agile Dashboard for 'Program Increment 1'. The left sidebar contains navigation options like 'Team Autopilot', 'Public', '1 PARENT PROJECT Autonomous Car', and various tools. The main area displays a Kanban board with three columns: 'TO DO' (7 items), 'ON GOING' (3 items), and 'DONE' (6 items). Each item is a task card with a title, ID, and progress indicators.

Item	TO DO (7)	ON GOING (3)	DONE (6)
story #13431	Measure the time of arrival of satellite		
task #29491	Refactor addMissing method	Delete satellite	task #29497 New plugin structure
task #29492	Implement mesure	task #29496 Add/Update satellite	
task #29493	Check arrival		
task #29494	Switch between satellites		
story #13432	Reduce speed to 30km/h inside cities	task #29481 Switch between km/h and m/h	task #29482 Cities selector
task #29478	Fix speed selector		task #29483 Add alert for the driver
task #29479	Refactor speedometer		task #29484 Save speed inside system
task #29480	Refactor old arch		task #29485 Cap speed
			task #29486 Fix wrong color for speed

Taskboard for "Team Autopilot" linked to the Autonomous Car ART

The screenshot shows the 'Test plan' and 'Test campaigns' section of the Tuleap Agile Dashboard. The left sidebar is the same as in the previous image. The main area is divided into two sections: 'Test plan' and 'Test campaigns'.

**Test plan:** Shows two stories with their associated test cases and configurations.

Story	Test Case	Configuration	Status
story #1987: Measure the time of arrival of satellite signals (4 planned tests)	test_case_4598: Check elimination of the interference	Configuration	✓
	test_case_4599: Investigation and verification of emission parameters with license conditions	Configuration	✓
	test_case_4600: Verify orbit position and frequency assignment	Security	!
	test_case_4601: Auto Build Velocity	Performance	?
story #198B: Reduce speed to 30km/h inside cities (5 planned tests)	test_case_4472: Measure the slightly radial speed difference from the satellites to each uplink station	Default settings	✓
	test_case_4473: Store precise position and velocity the main and the adjacent satellite	Default settings	✗

**Test campaigns:** Shows three campaigns with progress bars and test counts.

Campaign	Progress	Tests
CAMPAIGN RC-2	4 (green), 1 (red), 2 (blue), 3 (grey)	✓ 10 tests
CAMPAIGN RC-1	4 (green), 6 (grey)	✓ 10 tests
CAMPAIGN ALPHA	3 (green), 1 (red), 1 (blue), 3 (grey)	✓ 8 tests

"Team Autopilot" Program Increment testing plan

## Example of workflow across the ART and team levels

Here's how it works when you harmonize these different teams.

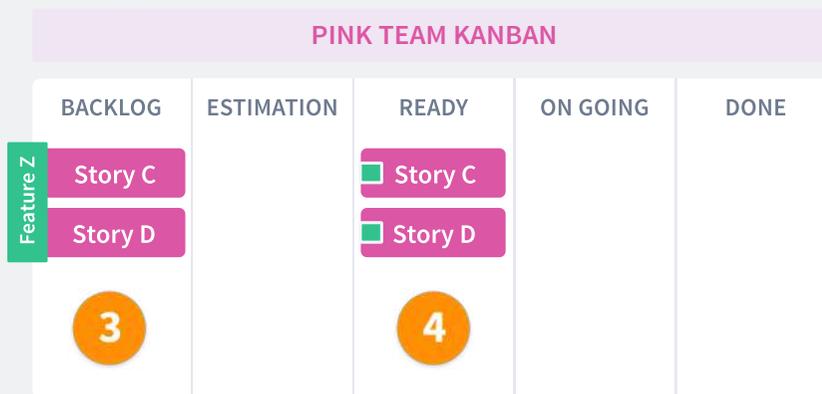
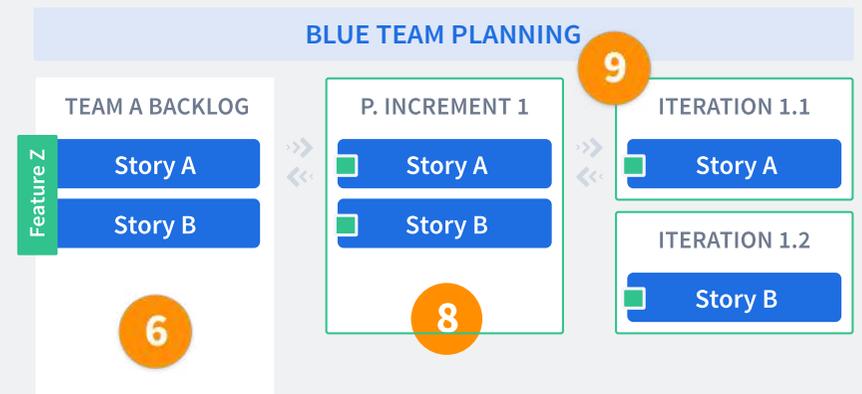
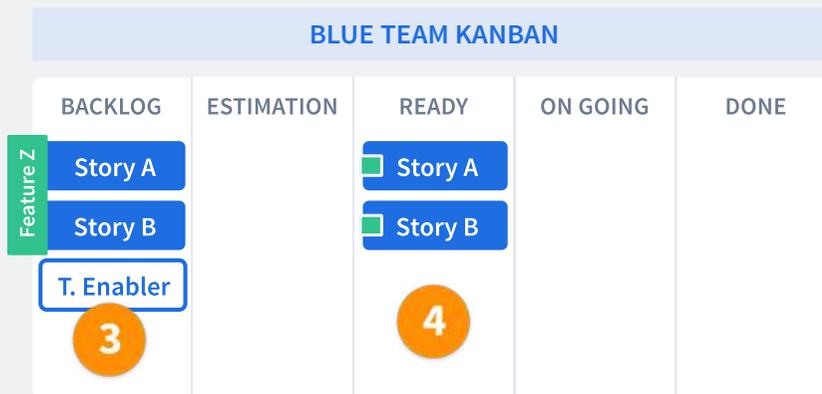
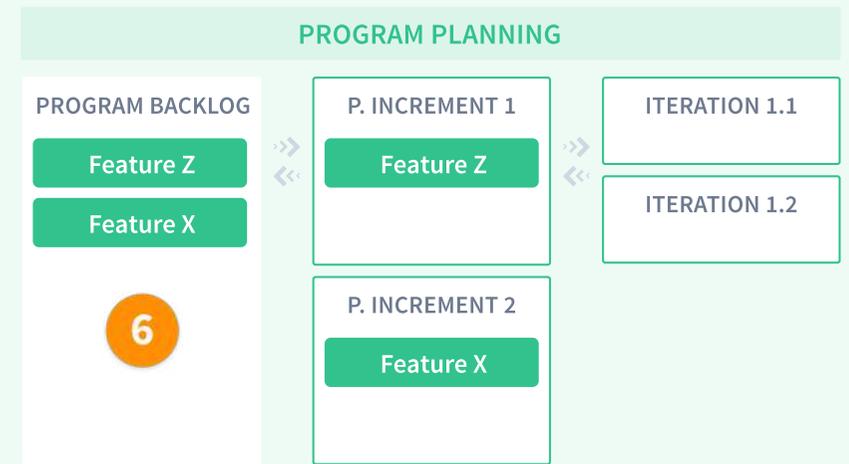
The diagram on the next page maps out the flow of work between the Program/ART level and the teams

level: This is the organizational structure proposed in the Tuleap Essential SAFe® templates.

In the diagram below, you will notice:

- A **green color-coded** “ART” workspace;
  - Two **blue** and **pink** color-coded “Team” workspaces.
1. At the Program level, the backlog is built including features and enablers.
  2. A particular feature is then “analyzed” in order, for example, to estimate the workload required from the teams.
  3. The **Blue** team and the **Pink** team then evaluate the Feature, and based on their particular competencies, divide the Feature into User Stories and Enabler Stories, for instance, in order to provide an estimate.
  4. Once the estimates and other required evaluations are complete, each team switches their Stories to “Ready” in the team Kanban.
  5. When all Stories and Enabler Stories associated with the Feature are “ready,” the Feature can be assigned with “To be planned” status in the Kanban at the Program level.
  6. The Feature then appears in the Program Backlog. It will then need to be planned. Any Stories related to this Feature are managed at the level of each Team Backlog.
  7. We now come to the PI Planning stage. The teams come together to plan the Features and Program Enablers in the Program Increments. The associated Iterations are also created. The Features are scheduled in the PIs. The associated content, User Stories, and Enablers are controlled at Team level. Each team is responsible for organizing their activities in their preferred way. Once the PI planning has been completed, the Feature changes to “Scheduled.”
  8. On the Team side, the User Stories and Enabler Stories associated with the Feature are visible in the corresponding PIs, mirroring the Program PI.
  9. Next, it's time for the Iteration Planning process for each team. Each team distributes the User Stories and Enablers as it wishes across the PI iterations.
  10. The Iterations progress. Each team can track the progress of their work in the Burnup, Burndown, and Velocity charts. Everyone can monitor the progress of the Program Increment thanks to a Burnup chart compiled from the number of artifacts to be created.

# SAFe Essential avec Tuleap

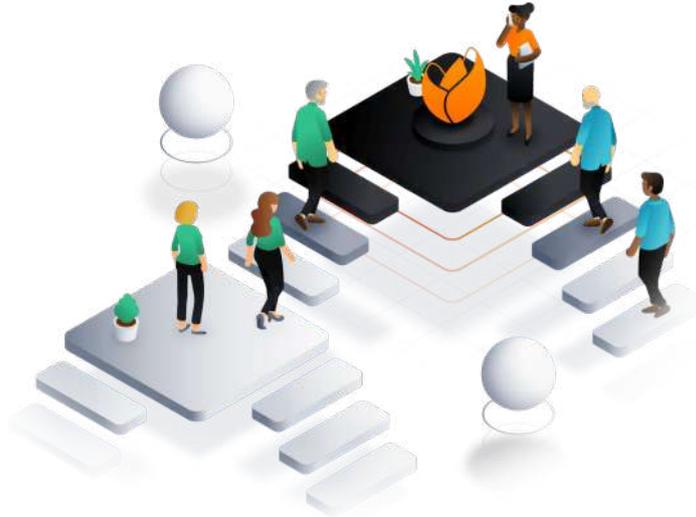


# Large-solution SAFe® with Tuleap

The implementation of Large Solution SAFe® involves the reproduction of the Essential SAFe® diagram for each of the Trains and its adaptation to the particular features of each one of them.



Coordinating multiple ARTs to implement Large Solution SAFe® with Tuleap.



# Getting started

In this document, we have outlined a number of possible SAFe® configurations within Tuleap. These are only suggestions, of course. As you know, the right scaled agile approach for your business **is the one that you select** because of the way it improves the efficiency of your organization and makes sense for your teams.

As Tuleap is extremely flexible, you can completely tailor the product to fit your way of doing things, your particular processes, and the specifics of your industry. As you move forward, you can easily adapt the tools and configurations involved, adding and removing them as necessary.

## How do our clients get started with SAFe® and Tuleap?

The most common approach involves the implementation of a pilot project for a period of three to six months. The following diagram shows how a “SAFe® Pilot Project with Tuleap” works.



- Phase 1: State of play and objectives. This is the “understanding requirements” stage. Here, the Tuleap team will be at your service with the aim of getting to know you and understanding your processes, the goals you want to achieve, and the specifics of your business.
- Phase 2: Tuleap for SAFe® in your company. Based on Phase 1, we work together to design the value streams and workflows in such a way as to ensure their implementation with Tuleap. We can create Tuleap SAFe® workspaces adapted to your organization and your requirements.

- Phase 3: Large-scale testing The workspaces created are presented to ambassador teams, perhaps members of the LACE<sup>6</sup>. We train up the people involved on the use of Tuleap for SAFe®. In this way, an initial ART or a series of ARTs can be launched. Over the course of the iterations, the teams share their views with us. Workspace configuration adjustments can take place until the workflows are satisfactory for everyone.
- Phase 4: Workspaces and workflows validated by the ambassador teams serve as a model for the company.
- Phase 5: By the end of the pilot project, you will have environment templates and reference teams that serve as examples of successful practice. The sharing of good practices and deployment can be done gradually, to ensure a smooth transition .

To continue the discussion and gain more information about the “SAFe® with Tuleap” pilot project, we invite you to contact us at the following address: <https://bit.ly/36Bd4IF>

**Let's talk about SAFe®  
and your organization**

Note:

If you'd like to be supported by a SAFe® coach or an agile transformation coach in parallel with the Tuleap pilot project, we can put you in touch with our partners.

Alternatively, if you're already working with a coach, we can work with them to implement the process with Tuleap.

Gartner, Magic Quadrant for Enterprise Agile Planning Tools, 25 April 2022, Bill Blösen et. al.

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<sup>6</sup> Within the scaled agile framework, the Lean-Agile Center of Excellence (LACE) is a small team of people dedicated to implementing the SAFe® Lean-Agile way of working.

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and your organization