



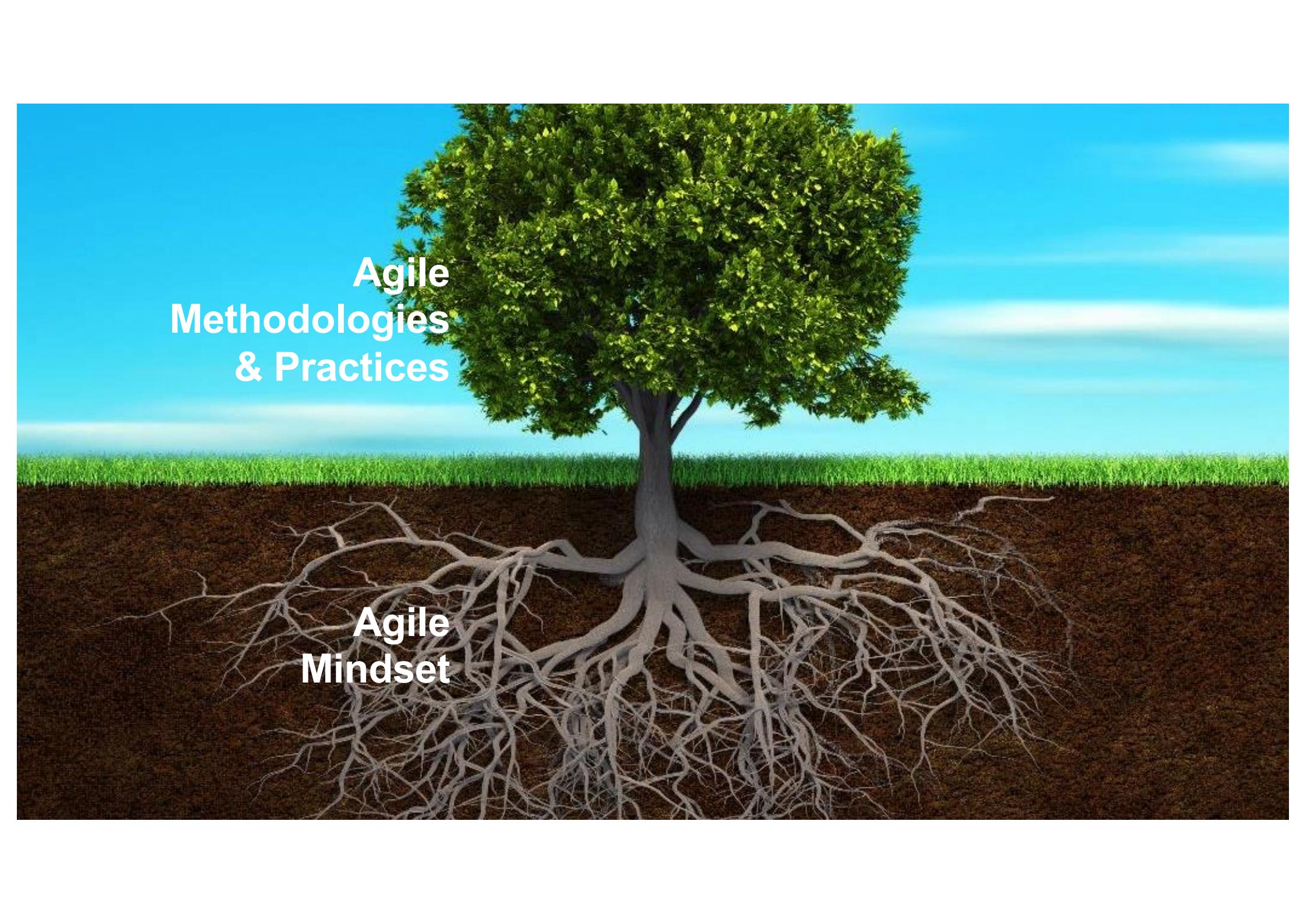
## BIS 2 - SCRUM



POLITECNICO  
MILANO 1863

## Agenda (~2h)

- Agile practices
- Today objectives
- Scrum overview
- Roles
- Events
- Artifacts



# Agile Methodologies & Practices

Agile  
Mindset

## Agile manifesto

# Agile Manifesto

We are uncovering better ways of developing software by doing it and helping others do it.  
Through this work we have come to value:

- Individuals and interactions over processes and tools**
- Working software over comprehensive documentation**
- Customer collaboration over contract negotiation**
- Responding to change over following a plan**

While there is value in the items on the right, we value the items on the left more.

# 12 Principles

- 1 Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
- 2 Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
- 3 Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
- 4 Business people and developers must work together daily throughout the project.
- 5 Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
- 6 The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

- 7 Working software is the primary measure of progress.
- 8 Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
- 9 Continuous attention to technical excellence and good design enhances agility.
- 10 Simplicity--the art of maximizing the amount of work not done--is essential.
- 11 The best architectures, requirements, and designs emerge from self-organizing teams.
- 12 At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

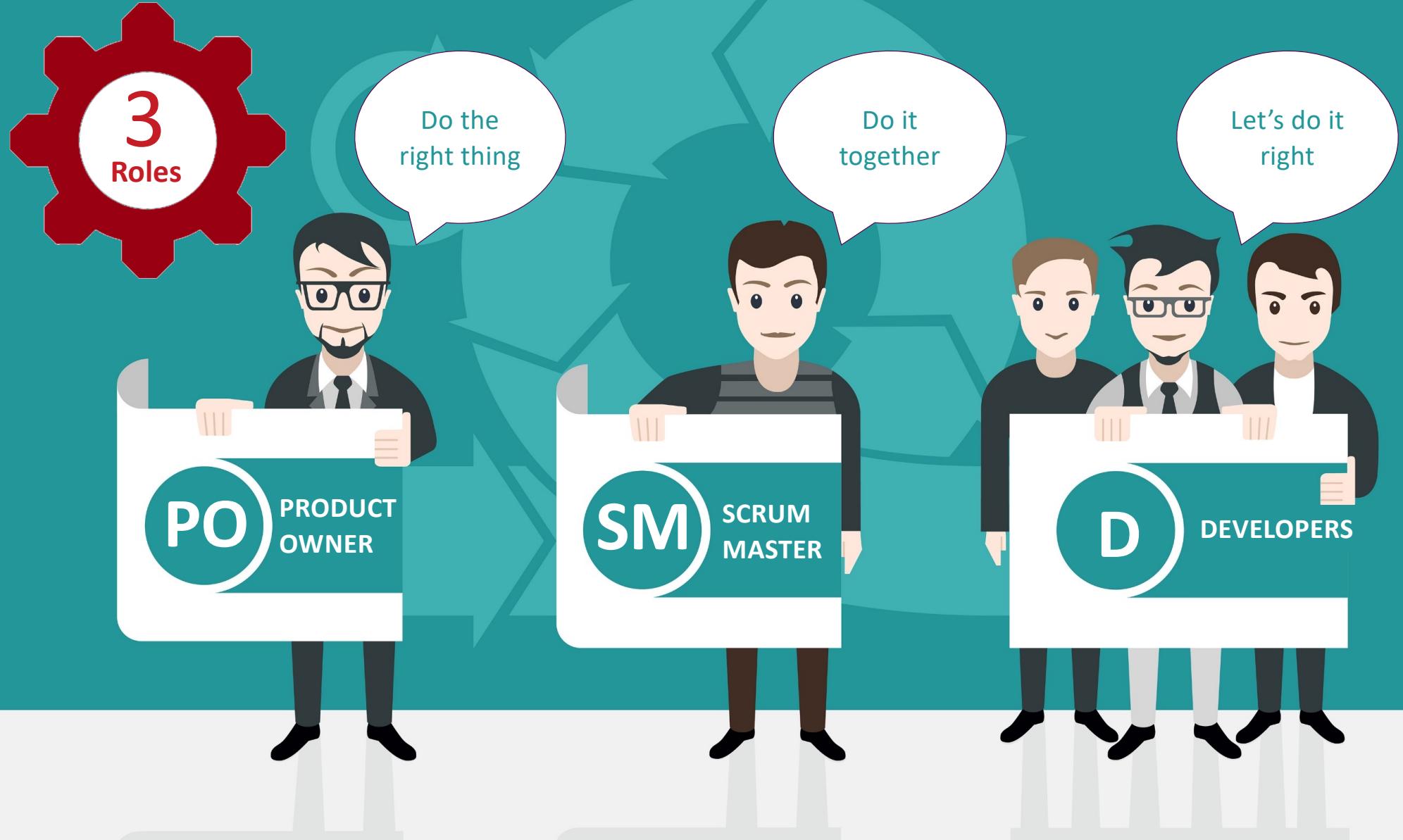
# Scrum

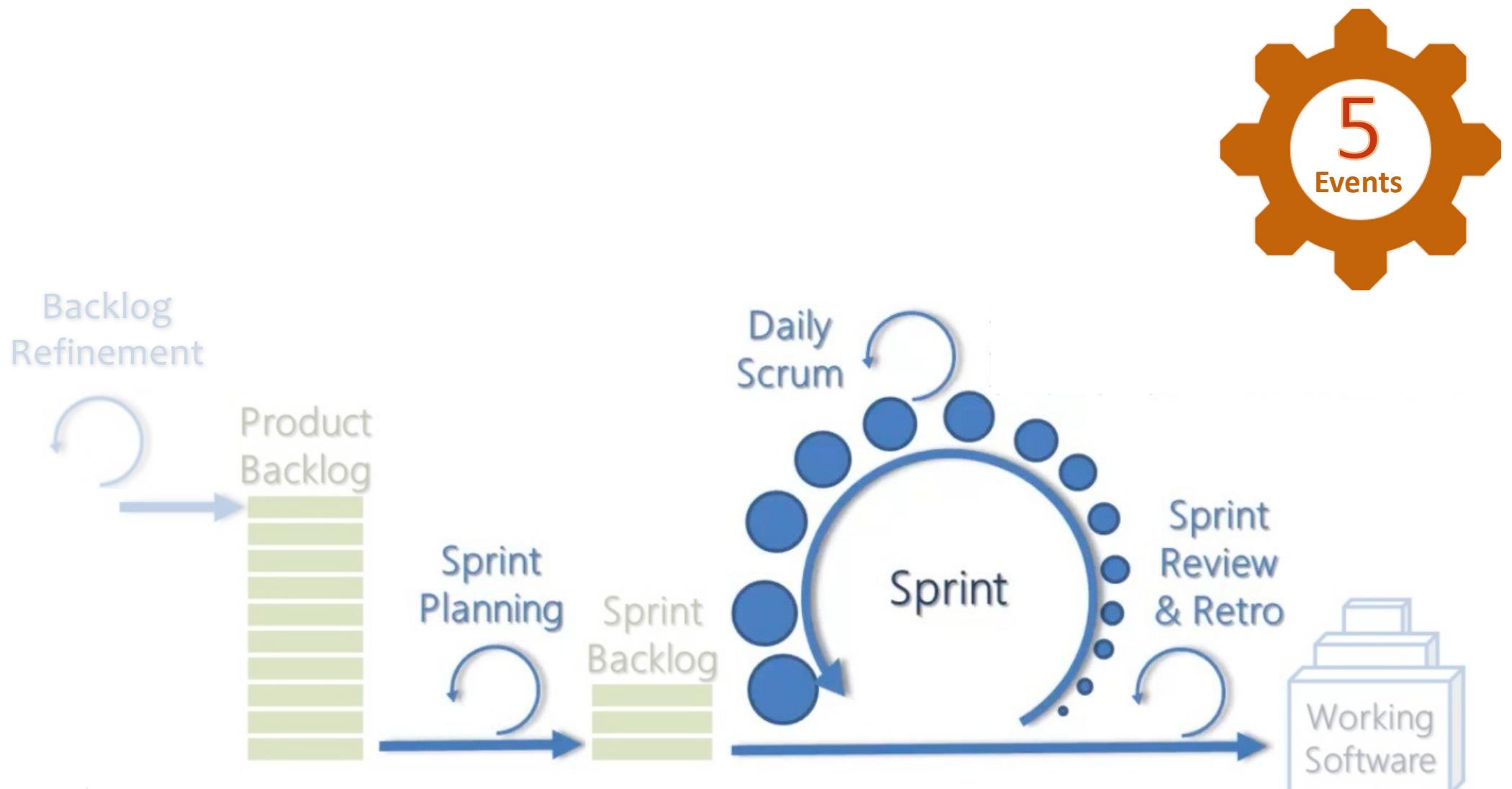
SCRUM: together for a common goal

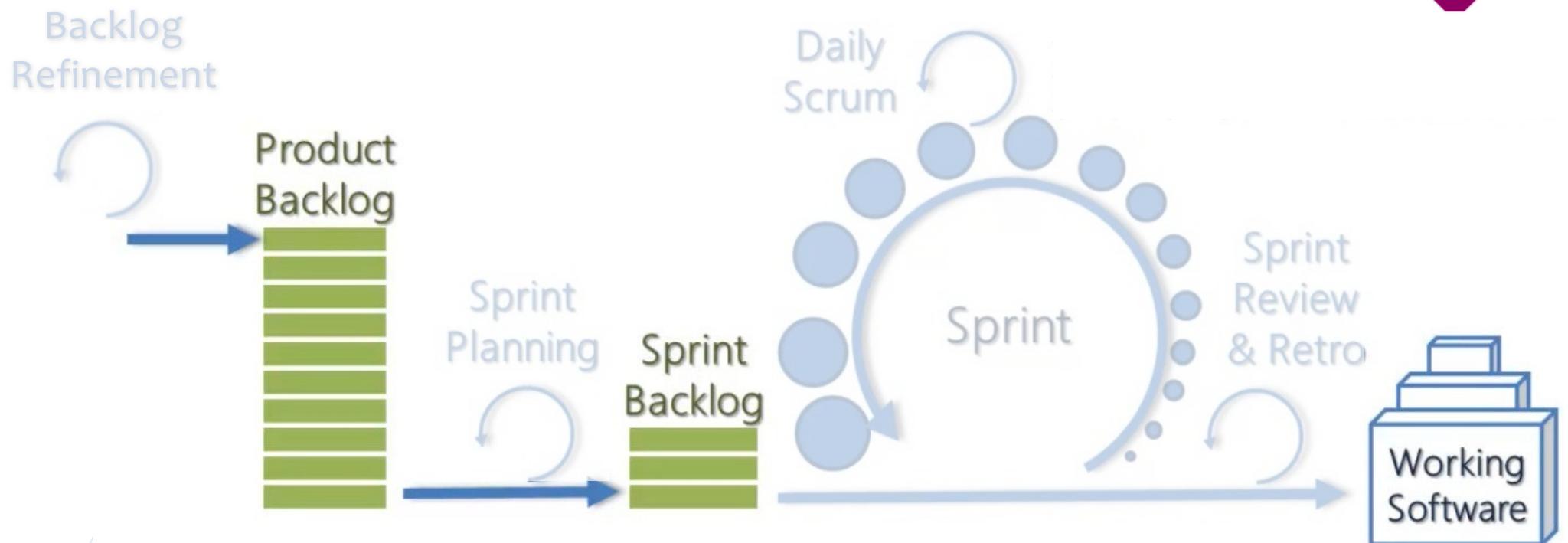
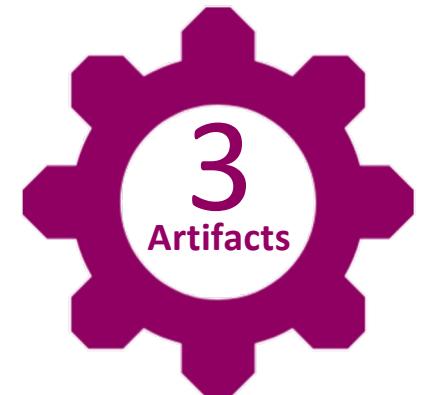


# Scrum Overview

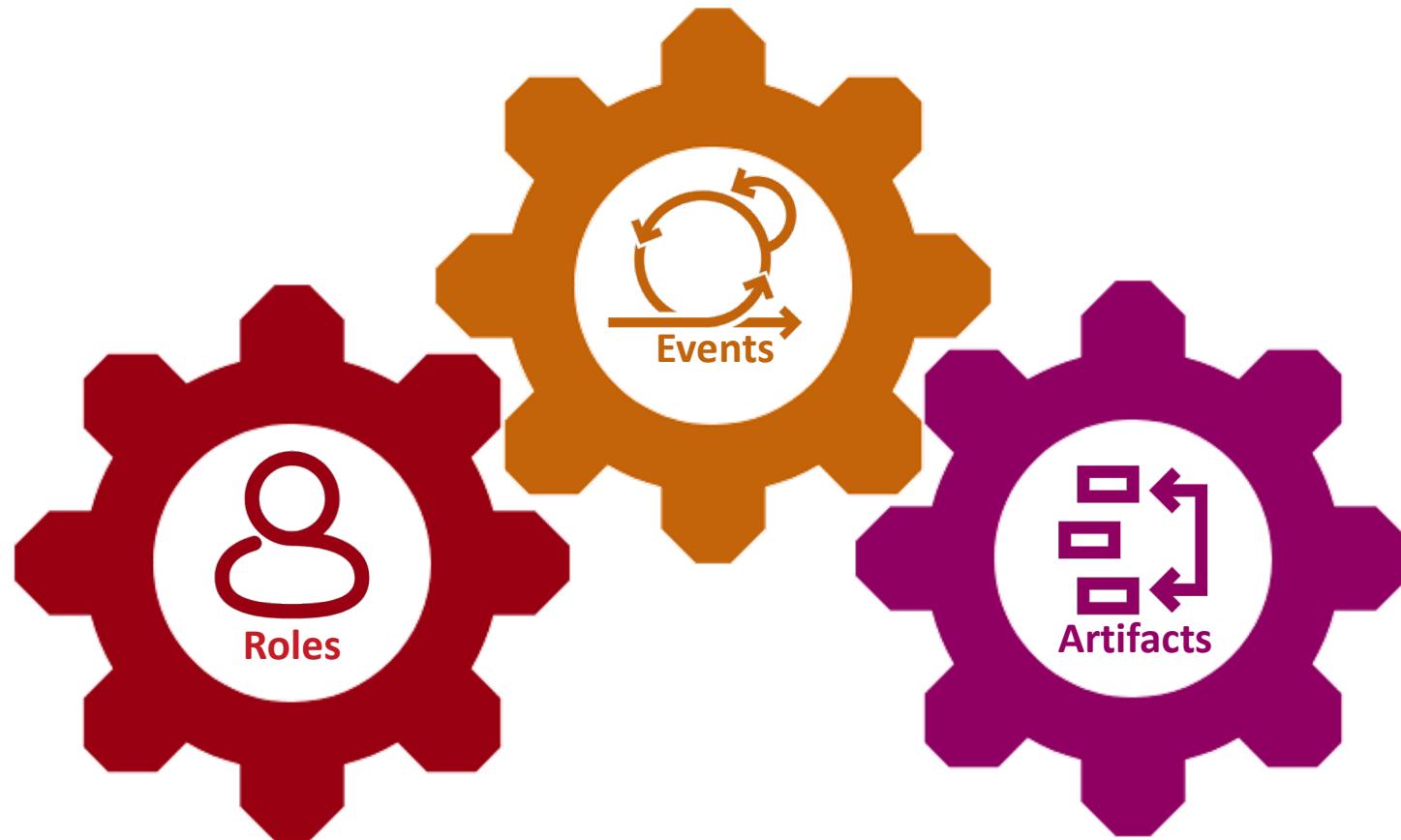








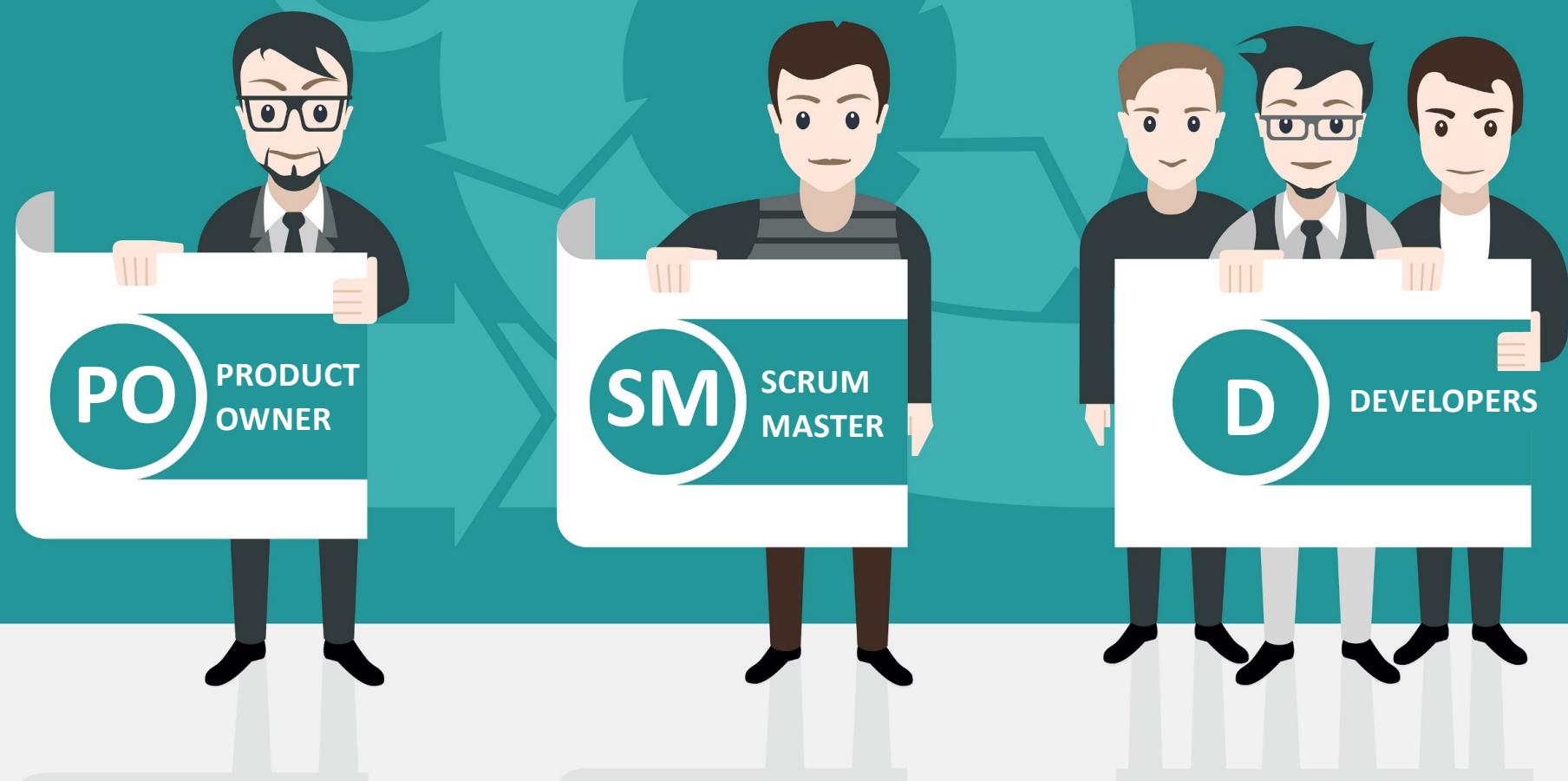
# Scrum in details



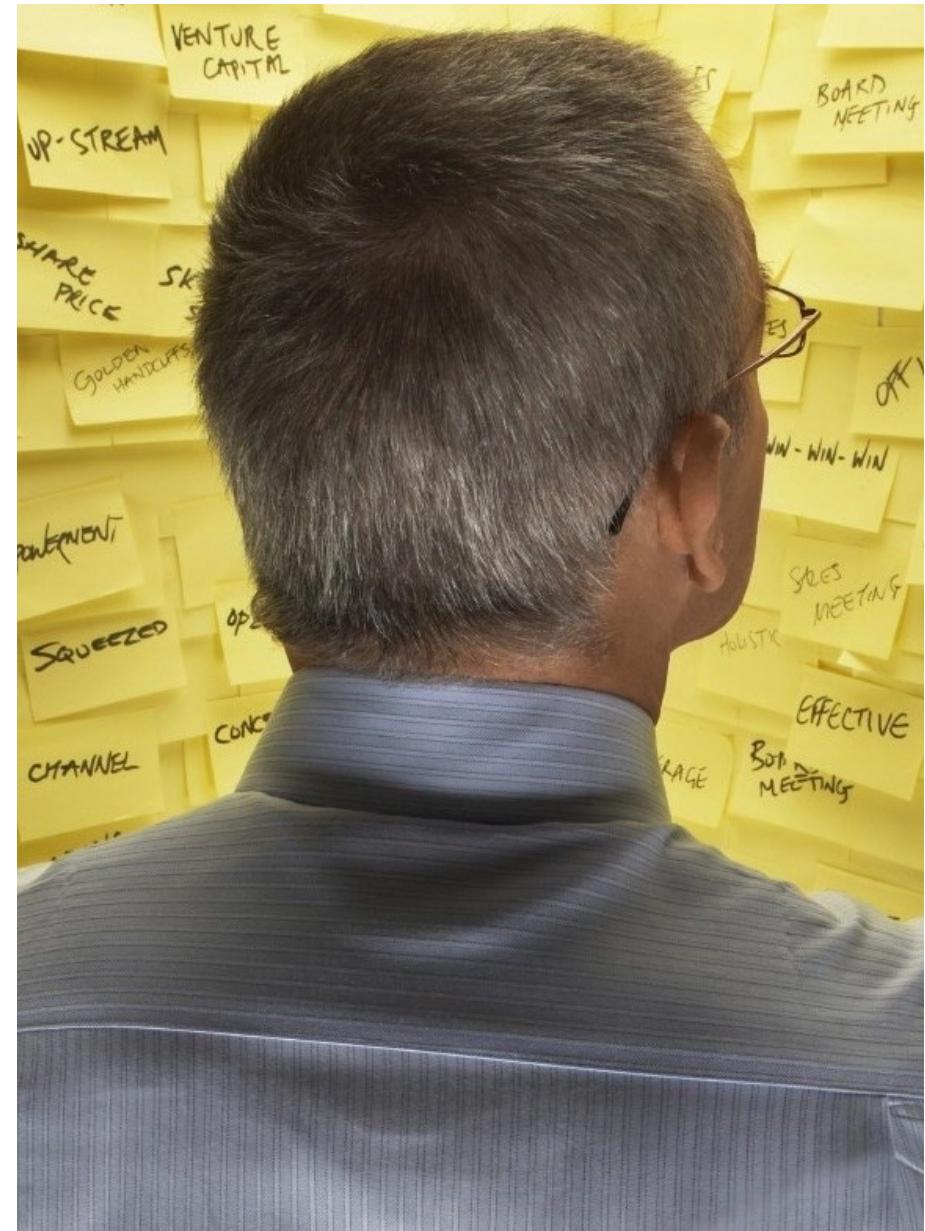
# Scrum roles



# Scrum Roles



- The Product Owner's primary responsibility is to maximize the value of the product resulting from the Scrum Team's work
- It defines the vision of what needs to be accomplished
- It is responsible for the effective management of the product backlog, including:
  - Create and communicate elements of the product backlog
  - Sort the items in the product backlog by their value
  - Make sure the product backlog is transparent, visible and clear
- The above actions can be carried out in person or delegated, but the PO is accountable.



## What does a Product Owner do?



Stakeholder



Team



- Defines the Product Vision
- Collects the requirements
- Gathers requirements
- Hypothesizes the product release plan
- Transforms the requirements in Features and User Stories
- Checks the Product Backlog
- Collaborates and answers product-related questions

DEVELO-  
PERS



- The development team consists of 3-9 people and is cross-functional
- It has all the necessary skills to create a "Potentially shippable Product Increment"
- **No role or title is recognized within the development team**
- The Team is self-organized
- The team is "empowered" to find the best solution



... is a facilitator, helps all roles and functions to collaborate effectively

... is a teacher / coach, "trains" the Team and the Product Owner, helping them to understand and follow Scrum values, practices and rules

... "protects" the team and educates people outside the team about the practices the team is adopting

... collaborates with the Organization to create the best working environment for the team to perform

... supports the team in removing impediments ...



# Scrum events

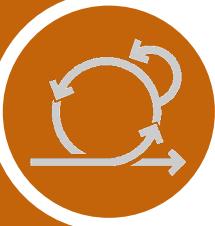


# Sprint

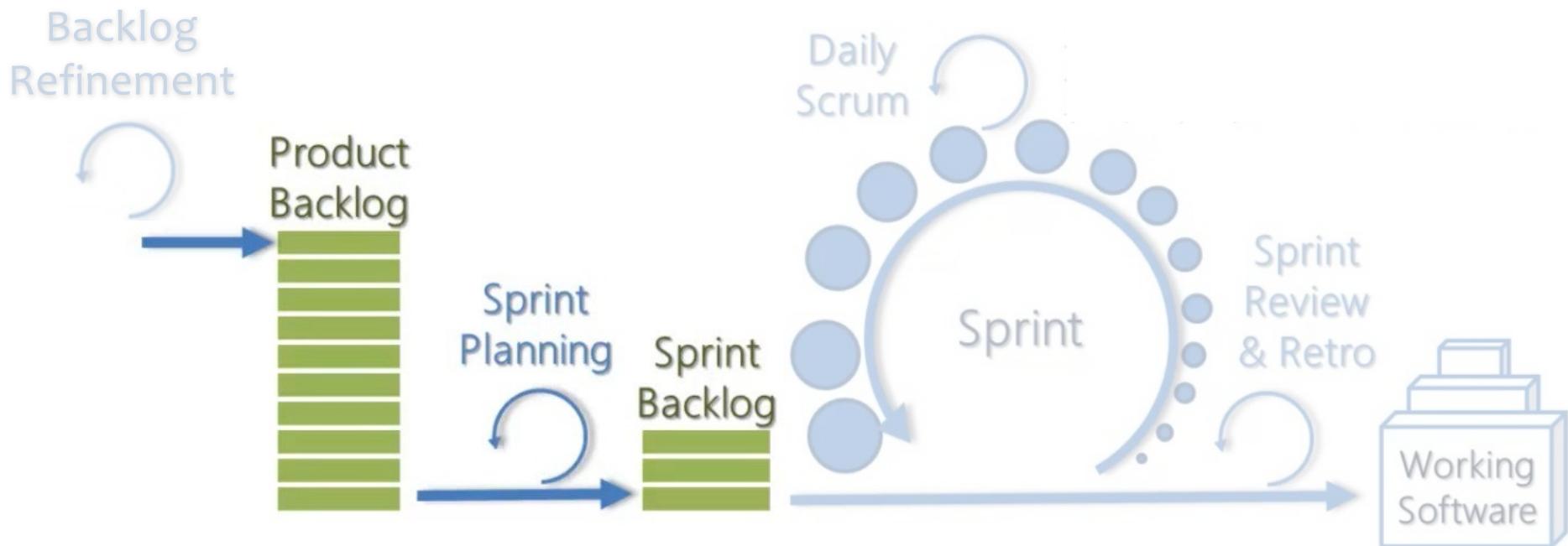
- From 1 to 4 consecutive weeks during which the team develops the **Product Backlog Items** (PBI) chosen during the **Sprint Planning** to reach the **Sprint Goal**
- Usually a duration of 2 weeks is selected
- Once the **Sprint** duration has been established, it is a good idea not to change it (unless the team decides it for a good reason)
- Changes to the **Sprint Backlog** during the **Sprint** should be avoided, unless the changes make it easier to achieve the goal, with the same product value
- No interruptions between sprints



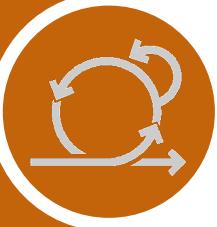
## SPRINT PLANNING



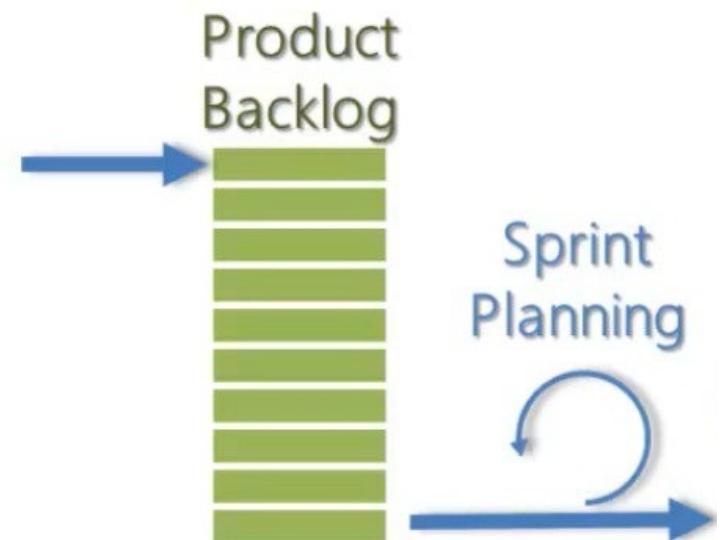
Event during which the Scrum Team sets a goal for the Sprint and plans how to achieve it



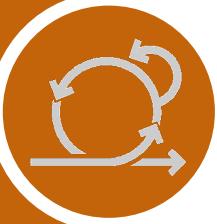
## SPRINT PLANNING



- At the beginning of each Sprint
- Sprint Planning is time-boxed (4-8 hours)
- The entire Scrum Team participates in the Sprint planning meeting
- It is divided into two parts: the first discusses which PBIs to put in the Sprint Backlog, the second discusses how to implement the chosen PBIs



## SPRINT PLANNING



### Part I -> WHAT?

#### Input

- Product Backlog
- Capacity of the team
- Team velocity

#### Output

- Sprint Backlog (Backlog Items)

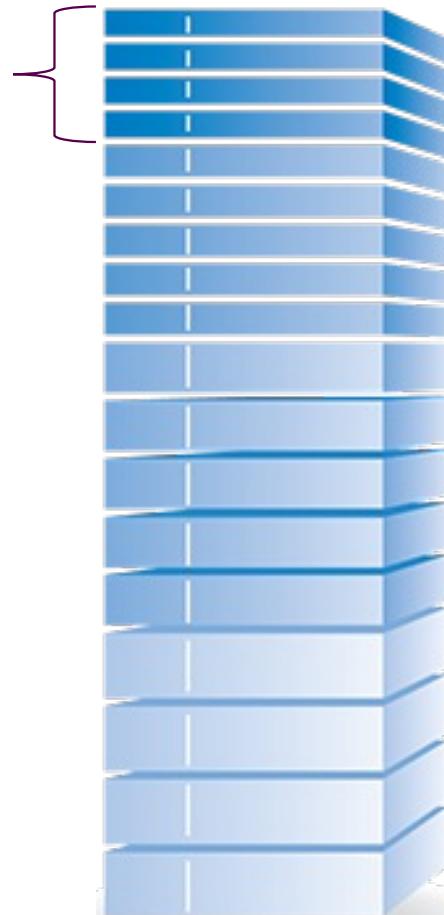
#### Rules

- The Product Owner explains the goal of the Sprint
- Only the Team decides how many stories to "draw" from the Product Backlog

Sprint Backlog



Product Backlog



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## SPRINT PLANNING



## Part II -> HOW?

### Input

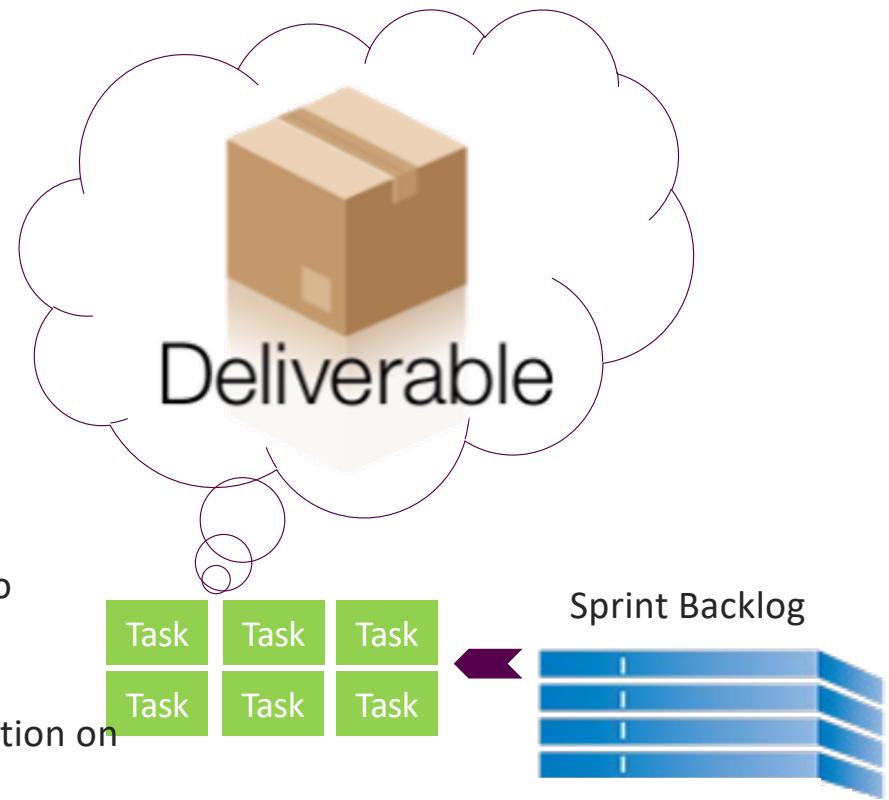
- Sprint Backlog (Backlog Items)
- Capacity of the team

### Output

- Sprint Backlog (Tasks)

### Rules

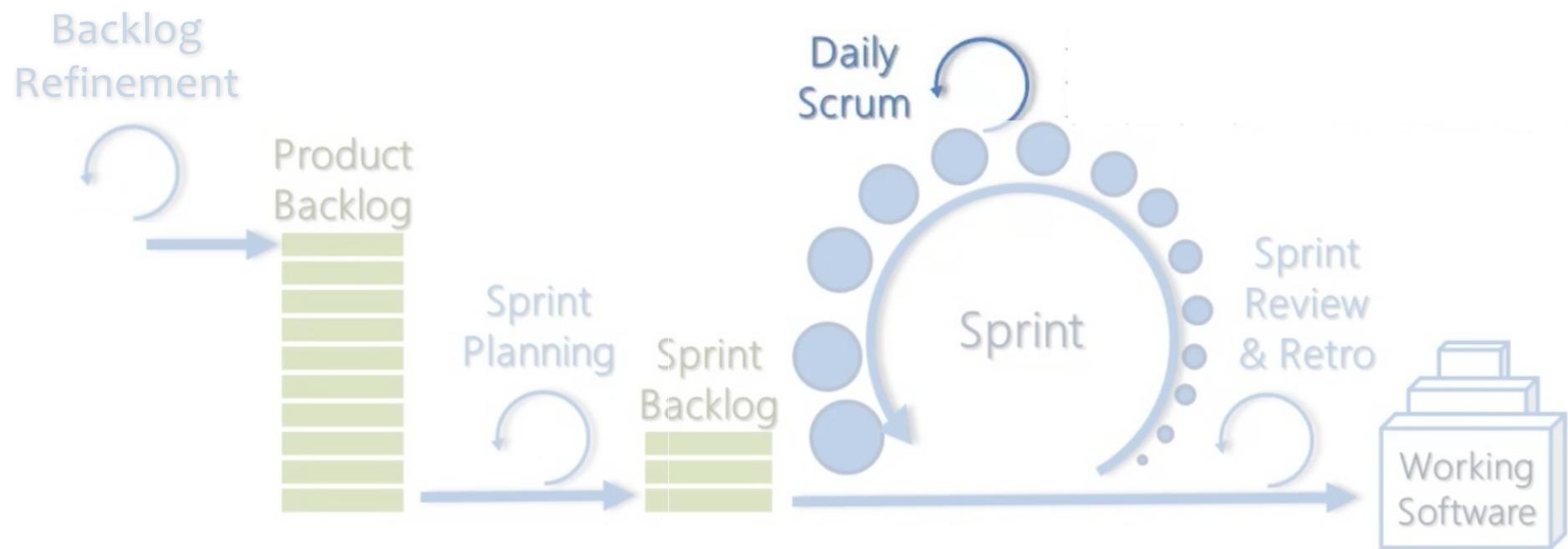
- The team reflects on how to transform Backlog Items into Potentially Shippable Product Increment
- The team identifies the tasks
- The Product Owner must be available to provide information on the Stories



## DAILY SCRUM



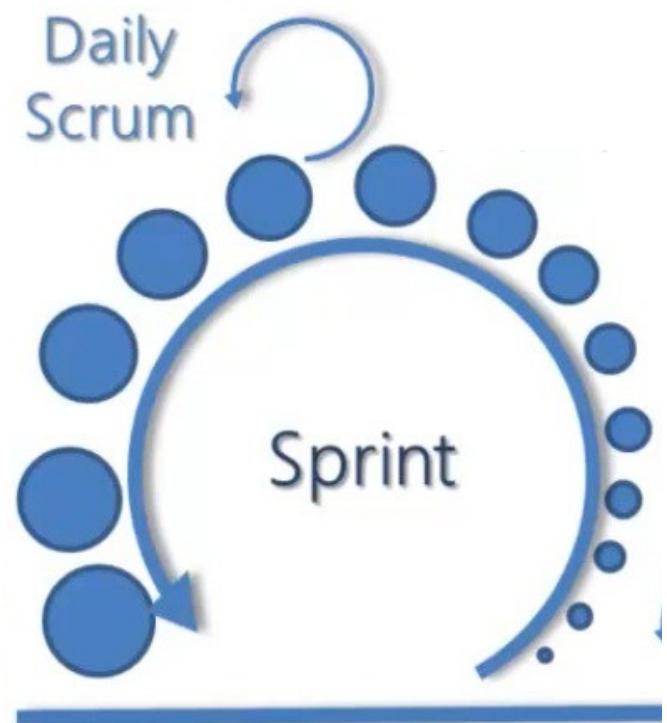
During the daily meeting the team organizes the day to advance towards the achievement of the sprint goal, communicates any impediments and aligns itself on the progress



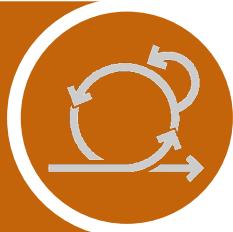
## DAILY SCRUM



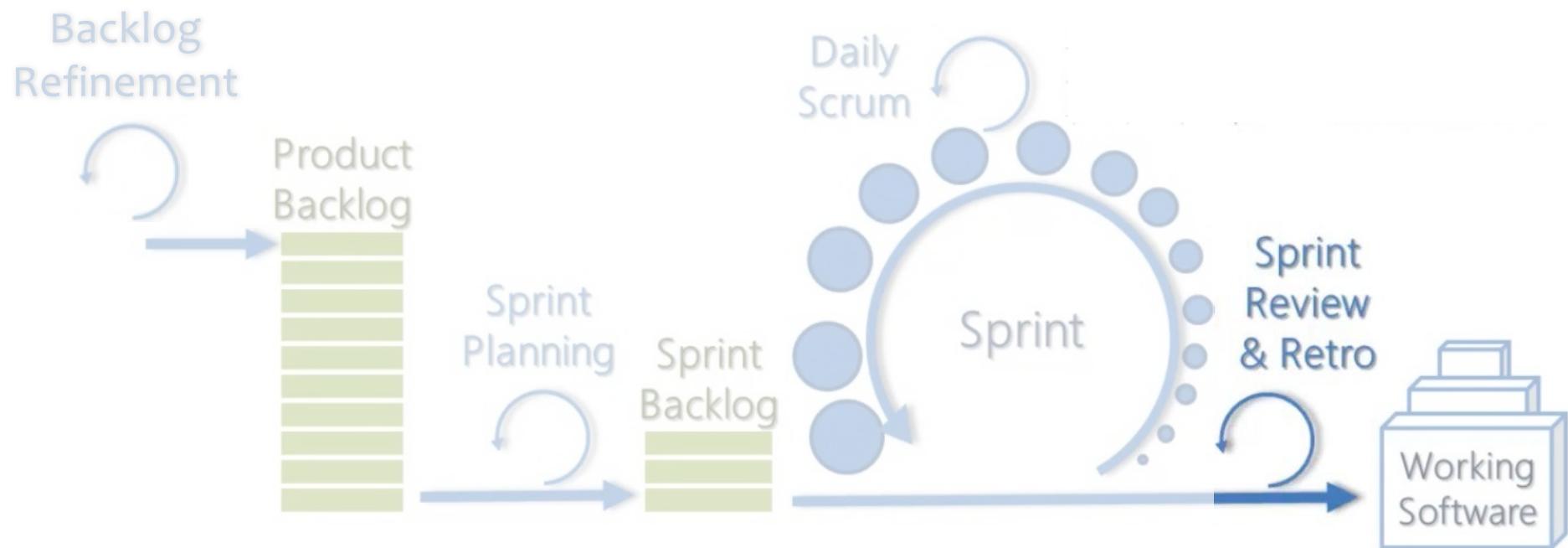
- The meeting has a maximum duration of 15 minutes
- There are several patterns that can be used to structure the discussion during the daily
- The Team can choose the most suitable structure, as long as the focus is on the advancement of the sprint and produces a feasible work plan



## SPRINT REVIEW



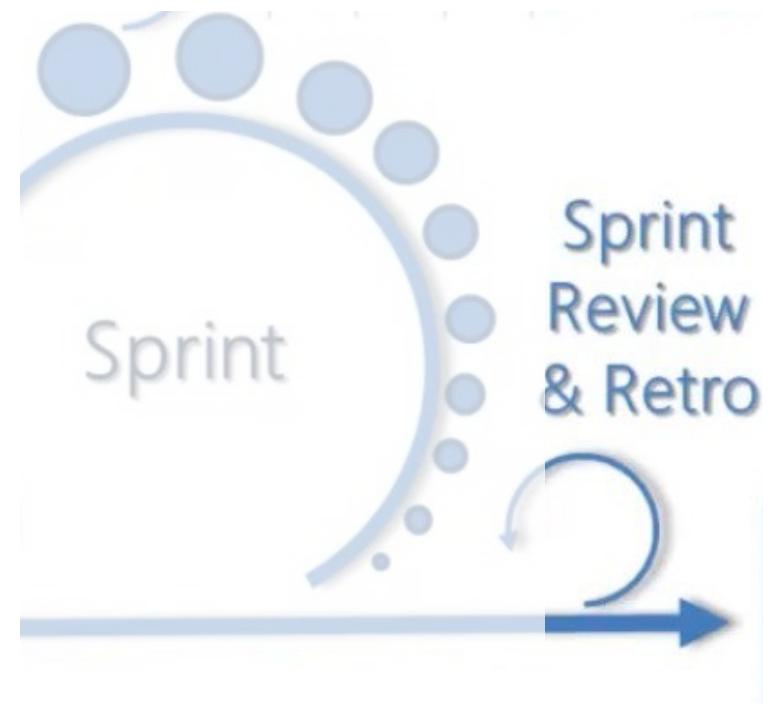
During the sprint review, the project is evaluated against the sprint goal defined during sprint planning. The completed items are presented to the PO that can accept or reject them asking for fixes and adjustments.



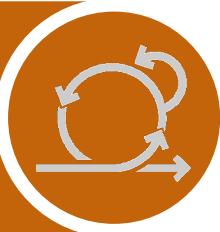
## SPRINT REVIEW



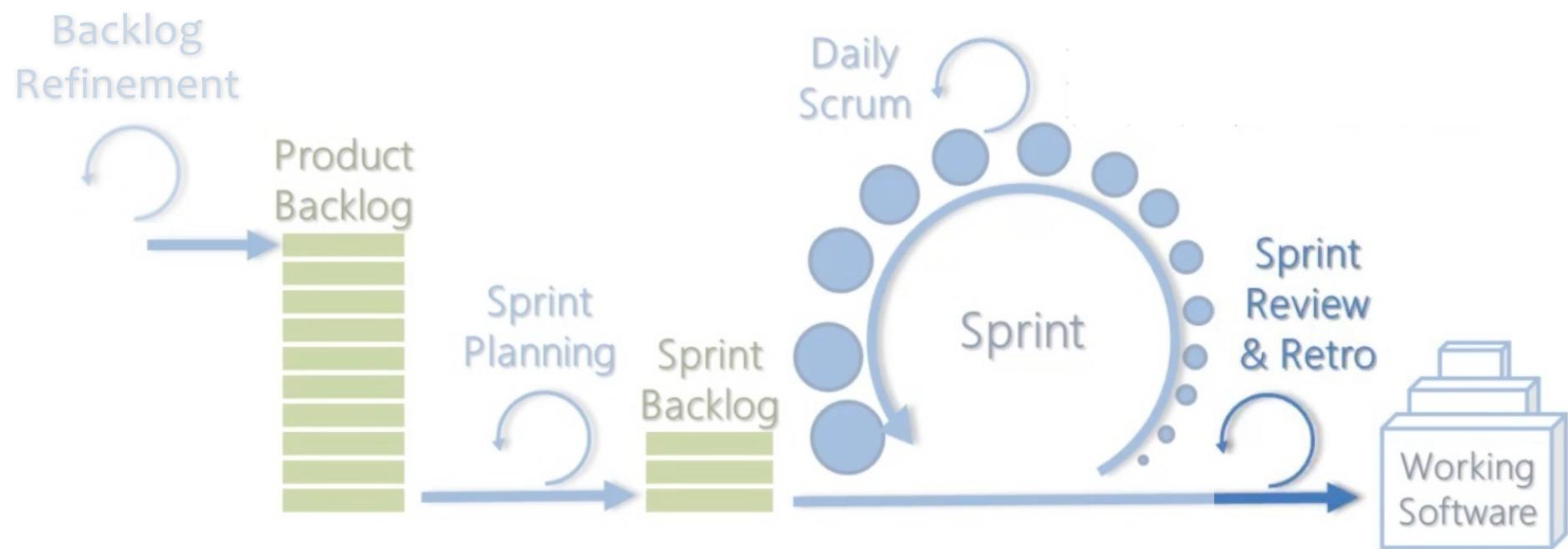
- The entire Scrum Team and the Key Stakeholders are present (in some contexts also colleagues from other departments, managers and customers)
- The Scrum Team conducts the review, showing to stakeholders what was accomplished in the sprint.
- The Product Owner accepts or rejects the various deliverables
- The Product Backlog is adapted based on the emerging feedback
- Duration: 1 hour for each week of the Sprint max



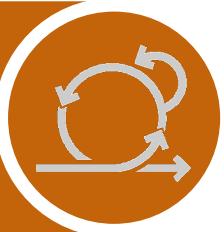
## SPRINT RETROSPECTIVE



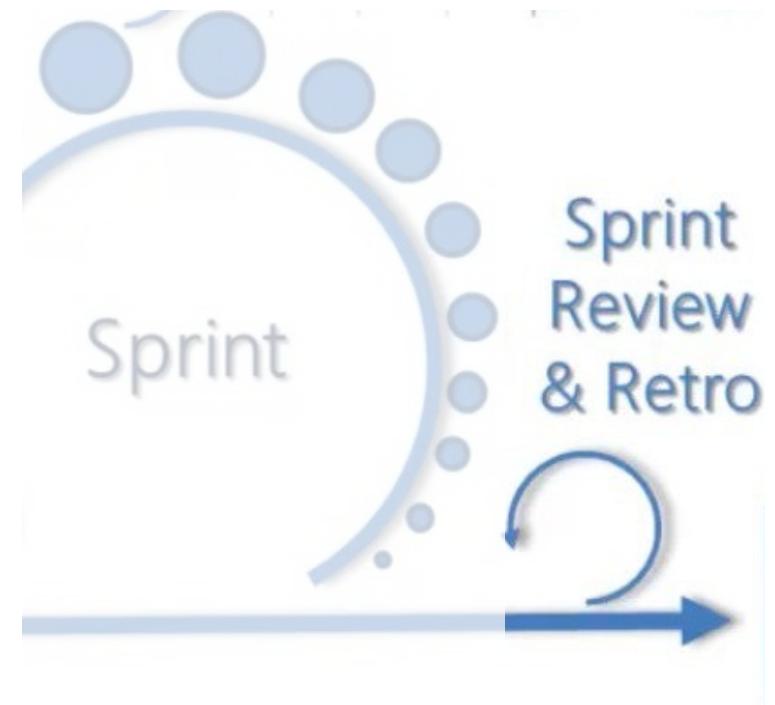
At regular intervals, the development team thinks about how to be more effective and hones their behavior accordingly



## SPRINT RETROSPECTIVE



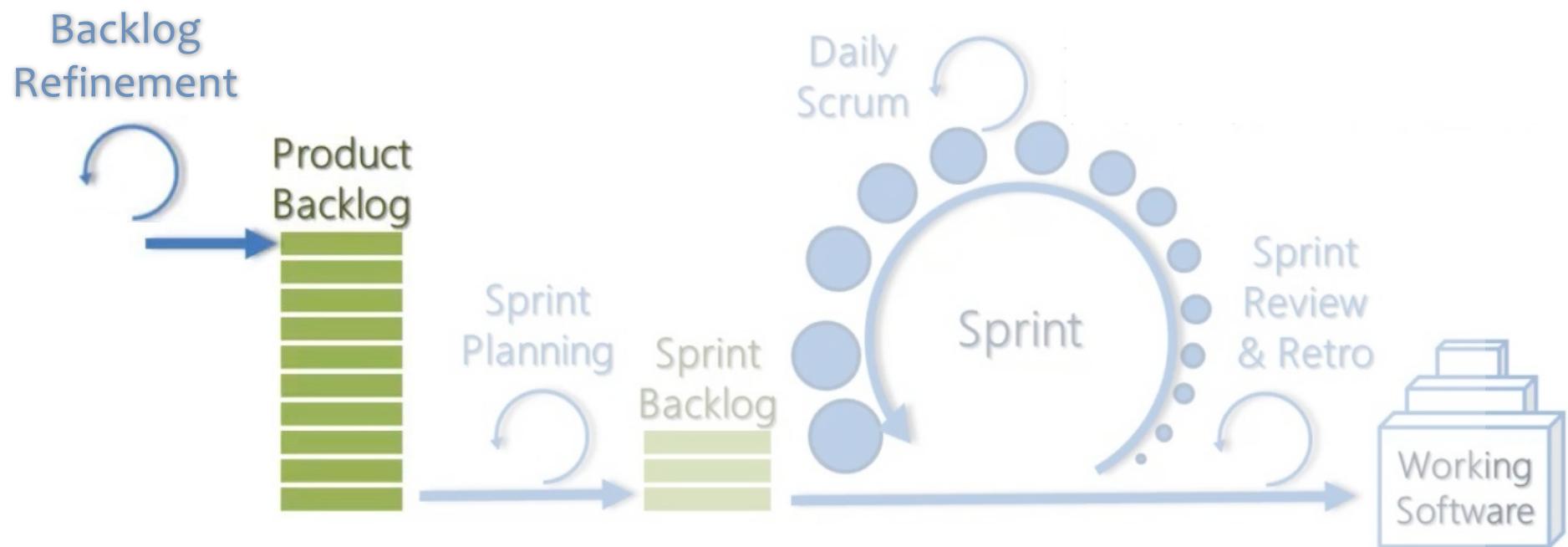
- The only goal is to grow and improve the team work and not trying to find the culprit
- During each Retrospective, the team, reflecting on the Sprint that has just ended, plans actions to increase the quality of the product, improving work processes.
- The Scrum Team, the Scrum Master, participates in the Retrospective. Even if the presence of the PO is not mandatory, it is still strongly recommended.



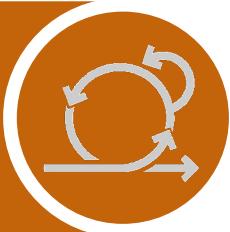
## BACKLOG REFINEMENT



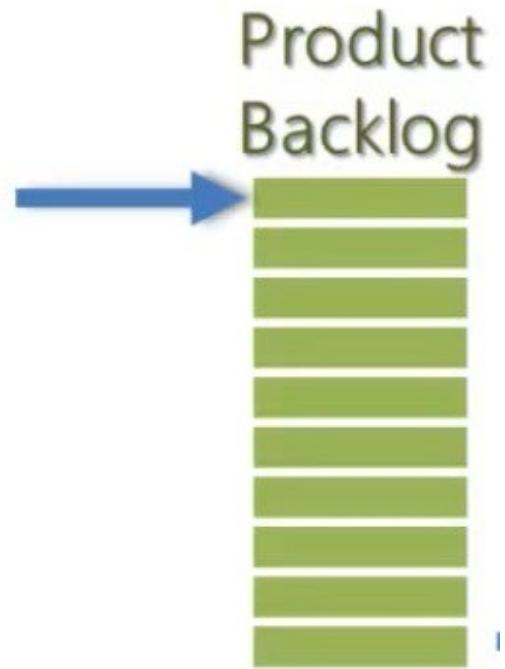
The Team collaborates with the Product Owner analyzing and estimating the stories to prepare the features to be worked on in subsequent sprints



## BACKLOG REFINEMENT



- All team members must be involved during the backlog refinement
- The entire Scrum team analyzes, breaks down and estimates User Stories
- The goal is to make the stories "ready" following the order of priority
- The backlog refinement meeting usually lasts one hour a week and is scheduled mid-sprint



## BACKLOG REFINEMENT



- The refinement backlog can also involve business contacts, becoming an opportunity to collect and deepen feedback
- From the direct confrontation with the business, the following may emerge:
  - **New requests**
  - **Priority changes**
  - **Task to remove from the scope**

## Project

### Backlog sprint 1

- Creare un capitolo del manuale
- Editare il manuale
- Pubblicare il manuale
- Inviare una notifica
- Caricare un verbale
- ...
- ...



### Backlog sprint 2

- Creare un capitolo del manuale
- Pubblicare il manuale
- (T) Rivedere la grafica del portale
- Editare il manuale
- Caricare un verbale
- ...
- ...



Inviare una notifica

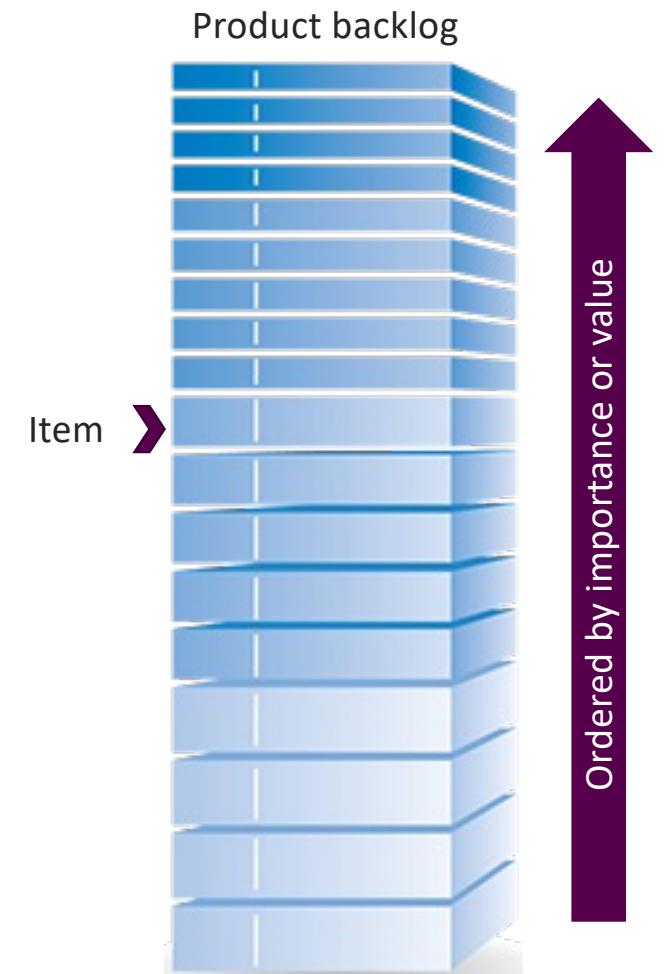
# Artifacts



## PRODUCT BACKLOG



- The Product Backlog is a list of items sorted on the basis of business value
- Items in the Product Backlog include features that go into realizing the Product Vision
- The highest, most valuable elements must be described in detail, so that the team can estimate and test them, and have a size that can be realized in the Sprint
- The list of stories evolves, changes and is updated continuously



# User story

The tasks that need to be done to reach the project objectives can be written as “User stories”

## Story

Card that describes a business requirement in a concise manner

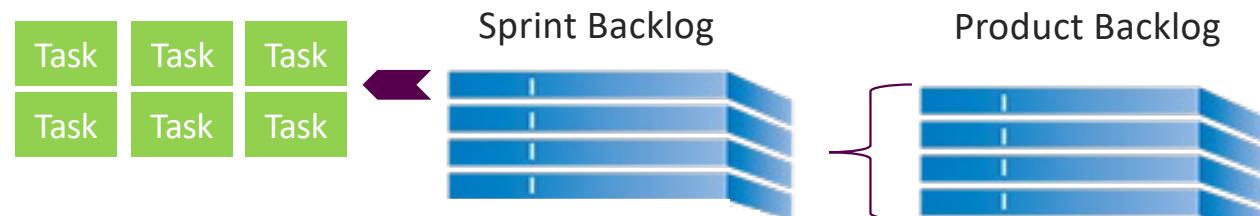
Types:

- Functional stories: contain use cases and describe functional requirements
- Non-functional stories (Technical): related to technical requirements, usually written by team members
- Consolidation and maintenance stories: they contain bugfix and fine tuning activities

## *Characteristics:*

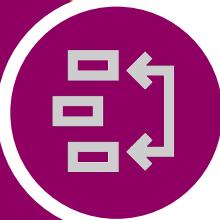
- Do not cross over into the space of the solution (to much)
- Provide a sufficient level of detail
- Reaching the right compromise between synthesis and completeness / comprehensibility
- Describe without using technical jargon

## SPRINT BACKLOG



- The Sprint Backlog is the list of PBI that the team has decided to make during the Sprint
- The Team typically relies on the historical production capacity of previous Sprints to decide how many stories to put into scope
- Each story is broken down into tasks by the team, which are identified following a detailed and shared technical analysis of the main technical aspects. This promotes self-organization and a sense of belonging to the team

POTENTIALLY  
SHIPPABLE  
PRODUCT  
INCREMENT

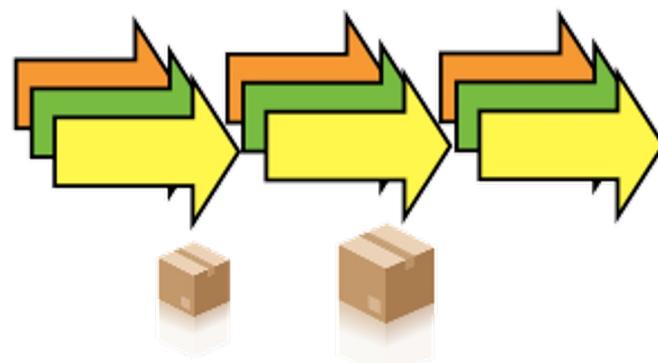


Traditional Development



Deliverable

Scrum Development



Deliverable

## POTENTIALLY SHIPPABLE PRODUCT INCREMENT



- It is the result of the Product Backlog items completed at each sprint
- The concept of "Done" is determined by the conditions identified by the Product Owner and the Team
- Being "potentially deliverable" does not mean that the results will actually be delivered to customers, but that the quality is so high that it can be done at any time

