

The Periodic Table of Scrum

In ¹ INCREMENT	Cu ^{>0} CUSTOMER		Re ⁴ SPRINT REVIEW		
	Po ¹ PRODUCT OWNER	Pb ¹ PRODUCT BACKLOG	Gr ^{10%} GROOMING	Pl ⁴⁺⁴ SPRINT PLANNING	
Do ¹ DEFINITION OF DONE	Dt ³⁻⁹ DEVELOPMENT TEAM	Sb ¹ SPRINT BACKLOG	Sg ¹ SPRINT GOAL	Ds ^{:15} DAILY SCRUM	Rt ³ SPRINT RETROSPECTIVE
Tb TIMEBOX	Sm ¹ SCRUM MASTER		Sp ^{1-4w} SPRINT		



The Periodic Table of Scrum

In INCREMENT 1	Cu CUSTOMER >0		Re SPRINT REVIEW 4	Customer
Do DEFINITION OF DONE 1	Po PRODUCT OWNER 1	Pb PRODUCT BACKLOG 1	Gr GROOMING 10%	Product Owner
Dt DEVELOPMENT TEAM 3-9	Sb SPRINT BACKLOG 1	Sg SPRINT GOAL 1	Ds DAILY SCRUM :15	Development Team
Tb TIMEBOX □	Sm SCRUM MASTER 1		Sp SPRINT 1-4w	Scrum Master
	People	Backlogs	Happenings	Zones

Key



Attributes

- 1** Quantity
- 1** Number of people
- Timebox in:
 - 4** hours for monthly sprint (proportionately less for shorter Sprints)
 - :4** minutes
 - 4w** weeks

Types

- Scrum Artifacts**
- Scrum Roles**
- Scrum Events**
- Other essential Scrum elements**



CATALYST

Does not take part in the reaction, but enables it or makes it more efficient



QUANTITY

Component quantity
An asterisk indicates one or more



A written reaction outcome indicates that there is more than the sole element created in the reaction.

In this example along with the Planning part 2 a Sprint Backlog is created.

Square brackets indicate an optional element



How to read reactions?



Scrum Role

A single person responsible for maximizing value delivered and long term ROI

- ❑ Must be a single person
- ❑ Is responsible for the budget
- ❑ Manages the Product Backlog
- ❑ Supplies vision
- ❑ Supplies overall direction of development
- ❑ Works with stakeholders
- ❑ Is a member of the Scrum Team
- ❑ Is the business/customer representative inside a Scrum Team
- ❑ May be the customer if he/she understands Scrum
- ❑ Collaborates with the Development Team on forecasting product development
- ❑ May not be a Scrum Master
- ❑ May supply requirements to the Development Team

Info

Product Owners are highly reactive and are essential compounds, but they cannot be obtained with a reaction.

Reaction

**Business Owner
Businessman**

Isotopes



Scrum Role

A self-organized and cross-functional team of professionals

- ❑ Has all the skills required to turn a Product Backlog Item into a releasable Increment
- ❑ May contain non-IT members
- ❑ Creates the Increment
- ❑ Estimates work
- ❑ Plans how to achieve a Sprint Goal
- ❑ Owns the Sprint Backlog
- ❑ Consists of 3-9 people
- ❑ Forecasts how much it can complete in a Sprint
- ❑ Selects the Scrum Master
- ❑ Is accountable for the work done
- ❑ There may be more than one Development Team on the Scrum Team
- ❑ Serves the Product Owner

Info

Development Teams are highly reactive and are essential compounds, but they cannot be obtained with a reaction.

Reaction

The Team

Isotopes



Scrum Role

Scrum Team's servant leader ensuring that Scrum is understood and properly executed

- ❑ Removes impediments from Development Team's way to increase their performance
 - ❑ Observes and gives feedback
 - ❑ Is not a secretary or a scribe
 - ❑ Has to ensure all element of Scrum are in place, but does not have to participate
 - ❑ Ensures transparency
 - ❑ Guards Scrum and Development Team rules
 - ❑ Ensures that the Scrum Team inspects and adapts
 - ❑ Is a member of the Scrum Team
 - ❑ Educates people involved about Scrum
 - ❑ Coaches the Scrum Team
- Extends Scrum values to the organization

Info

Scrum Masters are essential catalysts, but they cannot be obtained with a reaction.

Reaction

**Servant Leader
Coach
Master of Disaster**

Isotopes



Scrum Artifact

A usable version of the product ready to release at Product Owner's command.

- ❑ An increment is available at the end of each Sprint
- ❑ It has the highest possible value for the Customer
- ❑ Yields optimum long-term return on investment
- ❑ Created by the Development Team
- ❑ Quality level is obtained by a Definition of Done
- ❑ Represents the realization of the Sprint Goal
- ❑ May become Customer's property after each Sprint
- ❑ May be created by many Development Teams

Info

Do + Dt* + Sg

Reaction

Solution

System

Release

Product

Isotopes



Scrum Artifact

An ordered list of identified work managed by the Product Owner.

- ❑ Product Backlog consists of Product Backlog Items
- ❑ PBIs can be any type of work representation
- ❑ Is ordered by the Product Owner based on factors such as priority, cohesion, value, cost, risk etc.
- ❑ If there is work to be done it has to be represented in the Product Backlog
- ❑ Changes as more becomes known
- ❑ May be created by one or more Development Teams
- ❑ Is estimated by the Development Team
- ❑ Usually ordered and estimated during Grooming

Info

Cu + Po + Dt* + Gr

Reaction

**Work Repository
Inventory Backlog
Requirements List**

Isotopes



Scrum Artifact

A plan to reach the Sprint Goal created and maintained by the Development Team

- ▣ Contains a selection of PBIs
- ▣ Can contain tasks, stories, tests or other atomic work particles
- ▣ Sprint Backlog is created by the Development Team in the second part of the Sprint Planning
- ▣ Work in the Sprint Backlog is tracked at least daily
- ▣ Changes as more becomes known
- ▣ Reflects current state of work
- ▣ Often represented as a physical taskboard
- ▣ May be a kanban workflow board
- ▣ Each Development Team creates one Sprint Backlog per Sprint

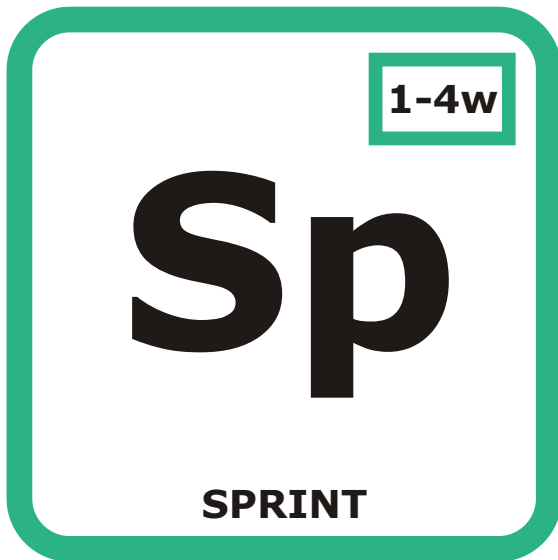
Info

$PI_{P1} + Sg + PI_{P2} + Dt_*$

Reaction

**Plan
Task list
PBI decomposition**

Isotopes



Scrum Event

A container where Scrum is executed, a project used to accomplish a goal

- ❑ Takes between a week and a calendar month
- ❑ Has constant duration
- ❑ Provides a rhythm for work
- ❑ There is no gap between Sprints, second begins immediately after first is over
- ❑ Development Teams' composition remains constant
- ❑ Pace of work is sustainable over many sprints
- ❑ May be terminated by the Product Owner
- ❑ Scope may be renegotiated
- ❑ Goal remains constant

Info

**In + Po + Pb + Cu + Gr +
Do + Dt* + Sb + Sg + Ds +
Tb + Pl + Re + Rt + Sm**

Reaction

**Iteration
Cadence
Cycle**

Isotopes

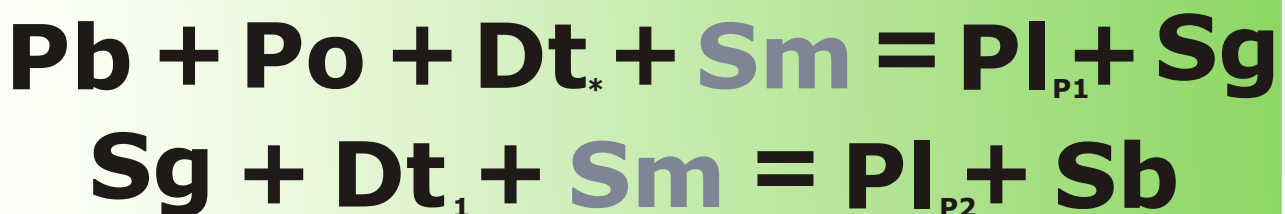


Scrum Event

An event for setting the Sprint Goal and deciding how to reach it

- ❑ Can be divided into two parts, part one answering “what” and part two answering “how”
- ❑ In the first part items to be done are selected from the Product Backlog by the Development Team
- ❑ The Development Team creates a forecast on how much it can accomplish in the upcoming Sprint
- ❑ A plan of reaching the Sprint Goal is constructed in the form of a Sprint Backlog
- ❑ With more than one Development Team part one is conducted with all teams present

Info



Reaction

**Planning
Planning Meeting**

Isotopes



Scrum Event

A meeting to optimize Development Team's actions for the upcoming 24 hours

- ❑ Is timeboxed to 15 minutes regardless of Sprint length and Development Team size
- ❑ Is separate for each Development Team
- ❑ Is not a status meeting
- ❑ Only the Development Team participates
- ❑ Scrum Master may facilitate
- ❑ It is the most granular planning meeting in Scrum
- ❑ Spectators are welcome, although they cannot interfere
- ❑ Development Team may use a Sprint Backlog

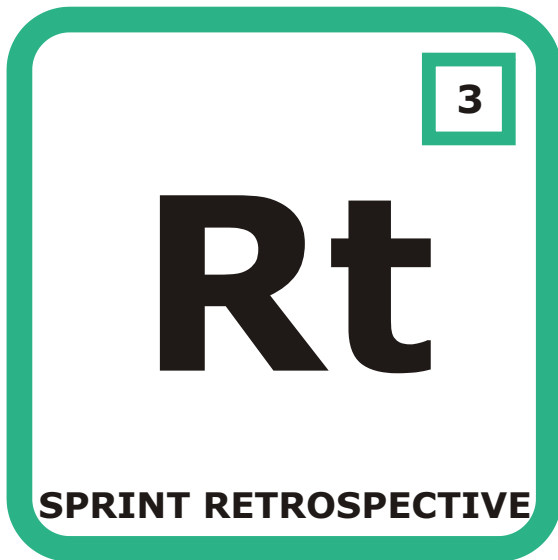
Info

[Sm] + Dt₁

Reaction

**Daily Huddle
Daily Meeting
Standup
Daily Standup**

Isotopes



Scrum Event

An event for the Scrum Team to inspect and adapt the process of work

- ❑ Whole Scrum Team participates
- ❑ Scrum Master may facilitate
- ❑ Process, impediments, tools and alike are discussed
- ❑ A retrospective ends with concrete actions, each having an owner and success criteria
- ❑ Retrospectives tend to get boring if conducted the same way for an extended period of time
- ❑ Insights for a retrospective might be collected during the sprint
- ❑ Retrospectives should be fun
- ❑ It is often conducted outside the office
- ❑ Anonymity is advised
- ❑ Often overlooked by immature teams

Info

Dt* + Sm + Po + [Sb*]

Reaction

Retro
Project Retrospective

Isotopes



Scrum Event

An event for the Scrum Team and its stakeholders to inspect and adapt the work progress

- ❑ Whole Scrum Team participates
- ❑ Customers and stakeholders are most welcome
- ❑ Usually starts with a demonstration of what has been done in this Sprint
- ❑ Product Owner may present product forecasts
- ❑ Product Owner and stakeholders give feedback
- ❑ Usually there are changes made to Product Backlog
- ❑ A direction for upcoming Sprints is established
- ❑ Product Owner may decide of product deployment
- ❑ Product Owner may decide to stop development
- ❑ Development Team's composition may change
- ❑ Additional Development Teams may be recruited
- ❑ Increment is inspected and the plan is adapted to the current business conditions

Info

In + [Pb] + Dt* + Po + [Cu*] + Sm

Reaction

**Presentation
Demo
Demonstration**

Isotopes



Scrum Element

Benefactor of the value delivered in the increment or his representative

- ▣ May be one or many
- ▣ May be the same as the user
- ▣ May represent the user
- ▣ May be a person or an institution represented by a person or many people
- ▣ Product Owner is customer's first contact point
- ▣ Customer understanding Scrum may become the Product Owner
- ▣ Is involved in inspect-and-adapt feedback loops for the product
- ▣ Pace of work is sustainable over many sprints

Info

Customers mainly react with Product Owners, but they cannot be obtained with a reaction.

Reaction

Client

Isotopes



Scrum Element

A definition of quality level of the increment

- ▣ Defines what needs to be done to a Product Backlog Item to turn it into a potentially releasable piece of software
- ▣ Is an outcome of negotiation between the Product Owner and the Development Team
- ▣ Usually involves different levels of testing, code quality practices, teamwork and elements specific to the domain
- ▣ All estimates are produced with the Definition of Done in mind
- ▣ Pace of work is sustainable over many sprints
- ▣ May change between Sprints

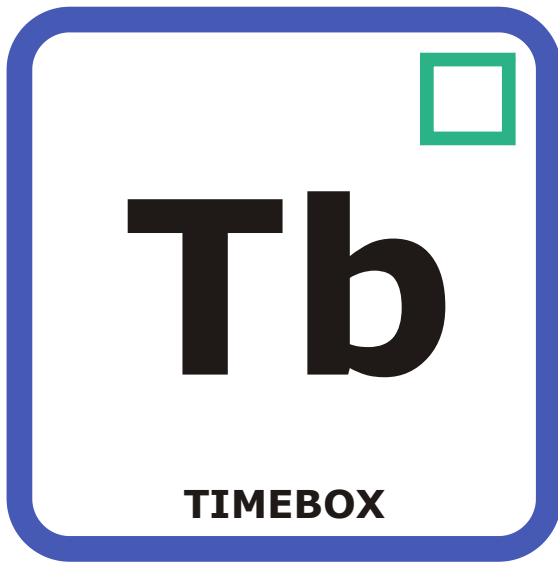
Info

Dt* + Po + Sm

Reaction

**Quality Criteria
The Done**

Isotopes



Scrum Element

A time limit for an event

- ▣ All events in Scrum are Timeboxes
- ▣ If something is timeboxed it can take the length of the timebox or less
- ▣ Scrum Master is usually in charge of keeping an event within a Timebox
- ▣ Timeboxed events become more efficient over time
- ▣ A Timebox may not be exceeded under any circumstances
- ▣ The only Timebox that may not end earlier is the Sprint

Info

Timeboxes can take many forms and there is an appropriate reaction to each of them

Reaction

**Meeting
Event
Duration**

Isotopes



Scrum Element

A goal of a single Sprint

- ▣ Is set during the Sprint Planning Meeting by the Development Team with the help of Product Owner
- ▣ Provides a direction for work in the Sprint
- ▣ May be a part of product roadmap goals
- ▣ May be a process improvement
- ▣ Provides some flexibility for the Development Team in how and what will they implement to reach it

Info

Pb + Po + Dt_{*} + Sm = PI_{P1} + Sg

Reaction

Objective

Isotopes



Scrum Element

A timebox dedicated to improving the Product Backlog

- ❑ Product Owner decides when and how to do it
- ❑ Product Owner may use up to 10% of the time allotted in the Sprint for it
- ❑ Usually conducted in second half of the preceding Sprint
- ❑ Usually Product Backlog Items are estimated
- ❑ Product Backlog Items may be broken down
- ❑ The order of the Product Backlog may be changed
- ❑ New items may be added to the Product Backlog
- ❑ After Grooming, approximately two Sprints' work is known well enough to be included in a Sprint
- ❑ Future plans may be discussed
- ❑ Scrum Master may facilitate

Info

Dt_{*} + Pb + Po + [Sm]

Reaction

Story breakdown
Product Backlog refinement
Estimation meeting

Isotopes