

Interaction between Project/Change/Problem Management: Marelli EPT use case

S. di Vico, C. Rosadini May 2023

## Agenda



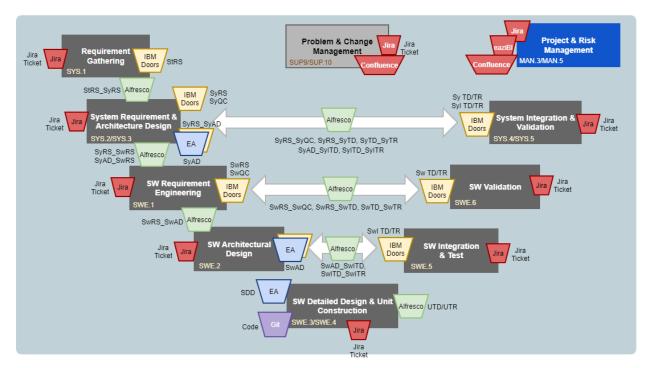
- Overview of Marelli EPT use case
- Project Management in EPT
  - Strategy
  - Deployment examples
- Change Request Management in EPT
  - Strategy
  - Deployment examples
- Problem Resolution Management in EPT
  - Strategy
  - Deployment examples



01 Overview of Marelli EPT use case

### Marelli EPT toolchain overview





#### Relevant tools:

- Jira Software is used as activity management (definition, planning, monitoring, traceability)
   Main involved processes: MAN3, SUP9, SUP10
- Advanced Roadmaps is a Jira plugin used as Gantt view for Jira tasks

Main involved processes: MAN3

- eazyBl is used as report generator tool for Jira
   Main involved processes: MAN3,
- Alfresco is used as project configuration management tool

  Main involved processes: SUP8

The strategy presented has been first applied by a Pilot Project

and then extended to a

(1 Team)

Customer Project

SUP9, SUP10

(10 Teams)

acronym

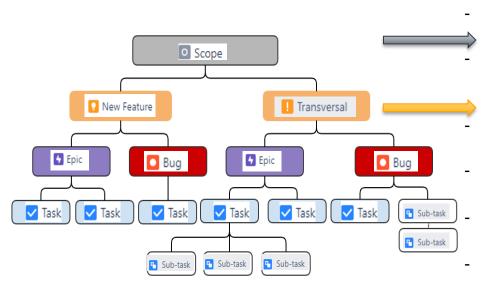
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Project Management in EPT Strategy

## WBS definition: which Jira issues for what purposes



With the aid of the Advanced Roadmap Jira Plug-in this structure could be made fixed, so that users must adhere to the WBS levels below:



Jira issues of type **Scope**: container of Feature representation or Activity Scope
Stakeholder requirements link in DOORs Jira issues of type New Feature: container of activities at system/SW level for a given system/SW feature being implemented System requirements link in DOORs

concern a specific feature (e.g. non-regression testing) Jira issues of type **Epic**: group activities related to a specific

Fira Saftwaref type irements link ing DOOD activities that do not

Jira issue of type Task or Sub-Task: the operative and detailed issues to specify a given activity

engineering phase (e.g. SW Requirement Engineering")

Jira issues of type **Bug**: represent the problems identified on the project

The sent industrian and tall down to top a mentioned almost experimentations to take to be the light a mention exist process for the plantage of the plantage defined, based on the information that for each ticket the team needs to track and later on graph for reporting

## Milestone identification and Sprint Creation



| High Level — Milestone | Low Level — Milestone              | Feature Goal Examples                                |  |  |  |  |  |
|------------------------|------------------------------------|--|--|--|--|--|--|
| Milestone X            | Sprint Y                           | State Machine  |  |  |  |  |  |
|                        | Sprint Y+1                         |  |  |  |  |  |  |
|                        | Sprint Y+2                         |  |  |  |  |  |  |
|                        | Sprint Y+3<br>(Release Candidate)  |  |  |  |  |  |  |
|                        | Sprint Y+4 (Bug Fixing)            |  |  |  |  |  |  |
| Milestone X+1          | Sprint Y+5                         | Wake Up  |  |  |  |  |  |
|                        | Sprint Y+6<br>(Release Candidate)  | Shut Down  |  |  |  |  |  |
|                        | Sprint Y+7 (Bug Fixing)            |  |  |  |  |  |  |
| Milestone X+2          | Sprint Y+8                         | Active Discharge<br>Rotor Temperature IMPLEMENTATION |  |  |  |  |  |
|                        | Sprint Y+9                         |  |  |  |  |  |  |
|                        | Sprint Y+10                        |  |  |  |  |  |  |
|                        | Sprint Y+11                        |  |  |  |  |  |  |
|                        | Sprint Y+12<br>(Release Candidate) |  |  |  |  |  |  |
|                        | Sprint Y+13 (Bug Fixing)           |  |  |  |  |  |  |
| Milestone X+3          | Sprint Y+14                        | Rotor Temperature                                    |  |  |  |  |  |
|                        | Sprint Y+15                        |  |  |  |  |  |  |
|                        | Sprint Y+16                        |  |  |  |  |  |  |
|                        | Sprint Y+17<br>(Release Candidate) |  |  |  |  |  |  |
|                        | Sprint Y+18 (Bug Fixing)           |  |  |  |  |  |  |

For each Milestone, regardless of the length of the Milestone, there shall be:

- a Sprint identified as the Release Candidate of the Milestone (all contents that need to be released in that milestone are completed)
- A Sprint identified as **Bug Fixing**, during which the testing and final review is executed (focus on fixing of the major Bugs)

In the first step of planning, at high level of the Milestone, the PM and Team Leaders shall assign the Feature and Epic goals for each milestone

It is based on these goals that the detailed planning shall be executed

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## WBS Project Estimations and Adjustments Time frame



**Project Perspective** = Scope

**Short Term** Perspective = Task Phase Perspective = New Feature/Tran versal

Milestone Stage Perspective = Epic Bugs

### **PLANNING**

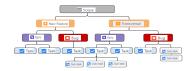
High Level planning of R&D PM with Team Leaders

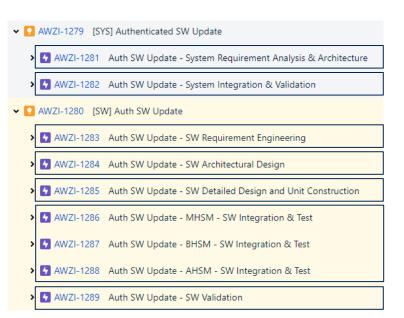
### **ADJUSTMENT**

Adjustment coming from the daily completion of activities from the teams 03 Project Management in EPT Deployment examples

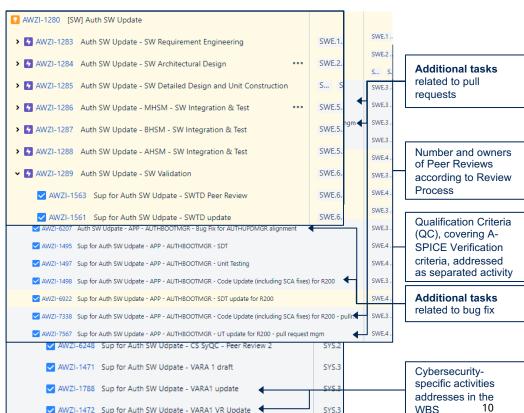
### WBS definition: deployment on a real example





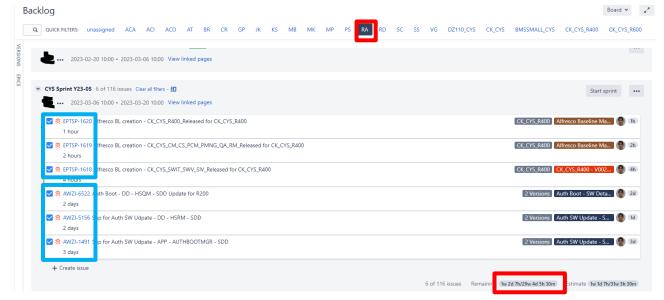


For each process the number of Epics depends on the number of macro-activities needed.



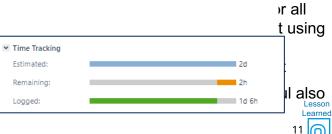
## Activity Planning: sprint-based planning





- Identified tasks are planned via 2-weeks sprint
- Planning takes into account task dependency (see previous slide)
- Workload for each sprint for each resource can be checked during planning using board filters (possible only if each task is assigned an estimated effort)
- Planning can be done for tasks belonging to multiple projects and using board filters to quickly identify them

- Each task is assigned an original estimated effort, with constraint that shall be no more than 40h If greater, the task is broken down in more tasks, with scope definition mentioned in the task title
- Valuing of estimated effort is done interacting with team members during task creation Adoption of a template structure with default effort is also possible (effort refinement will occur during sprint planning)

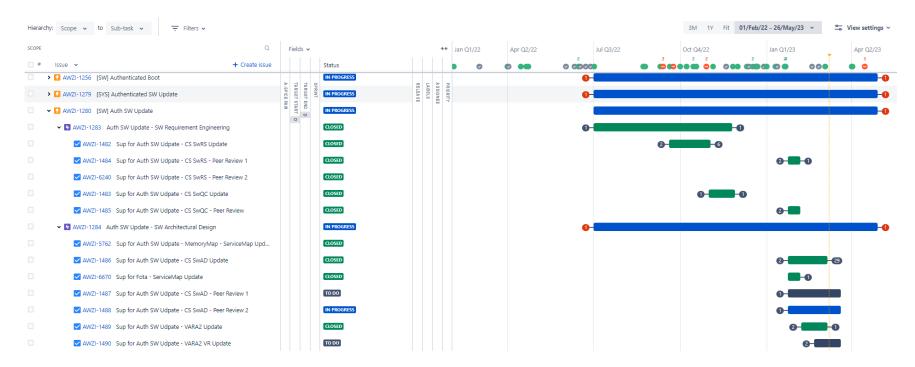


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## Activity Planning: Gantt view

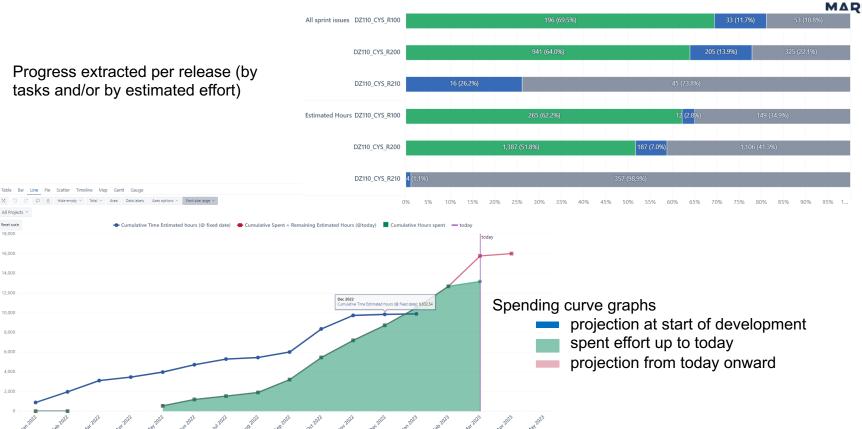


- Planned tasks are also visible in a project-like view
- Violated time dependency between tasks (if any) is spotted in this view (in red)



Lesson Learned

### Activity Monitoring: eazyBl





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## Activity Monitoring: eazyBI<sub>cont'd</sub>



WBS Actual and Target End Date control

| Issue<br>Actual<br>start | Issue<br>Target<br>start                            | Issue<br>Actual/Target<br>start                                     | Actual/Target<br>start WARNING  | Issue Issue<br>Actual Target<br>end end  |  | Issue<br>Actual/Target<br>end  | Actual/Target<br>end WARNING  |  |
|--------------------------|---|---|---|--|--|--|---|--|
| Sep 02 2022              | Oct 10 2021   | 327   | LATE  | Sep 02 2022  | Jun 09 2022  | 85   | LATE  |  |
| Sep 02 2022              | Feb 01 2022   | 213   | LATE  | Sep 02 2022  | Dec 01 2022  | -90  | IN ADVANCE  |  |
| Sep 02 2022              | Feb 01 2022   | 213   | LATE  | Sep 02 2022  | Dec 01 2022  | -90  | IN ADVANCE  |  |
| Sep 02 2022              | Feb 01 2022   | 213   | LATE  | Sep 02 2022  | Dec 01 2022  | -90  | IN ADVANCE  |  |
|                          | Actual start  Sep 02 2022  Sep 02 2022  Sep 02 2022 | Actual Target start Sep 02 2022 Oct 10 2021 Sep 02 2022 Feb 01 2022 | Actual start         Target start         Actual/Target start           Sep 02 2022         Oct 10 2021         327           Sep 02 2022         Feb 01 2022         213           Sep 02 2022         Feb 01 2022         213 | Actual start         Target start         Actual/Target start         start WARNING           Sep 02 2022         Oct 10 2021         327         LATE           Sep 02 2022         Feb 01 2022         213         LATE           Sep 02 2022         Feb 01 2022         213         LATE | Actual start         Target start         Actual/Target start         start WARNING         Actual end           Sep 02 2022         Oct 10 2021         327         LATE         Sep 02 2022           Sep 02 2022         Feb 01 2022         213         LATE         Sep 02 2022           Sep 02 2022         Feb 01 2022         213         LATE         Sep 02 2022           Sep 02 2022         Feb 01 2022         213         LATE         Sep 02 2022 | Actual start         Target start         Actual/Target start         start WARNING end         Actual end         Target end           Sep 02 2022         Oct 10 2021         327         LATE         Sep 02 2022         Jun 09 2022           Sep 02 2022         Feb 01 2022         213         LATE         Sep 02 2022         Dec 01 2022           Sep 02 2022         Feb 01 2022         213         LATE         Sep 02 2022         Dec 01 2022 | Actual start         Target start         Actual/Target start         start WARNING         Actual end         Target end         Actual/Target end           Sep 02 2022         Oct 10 2021         327         LATE         Sep 02 2022         Jun 09 2022         85           Sep 02 2022         Feb 01 2022         213         LATE         Sep 02 2022         Dec 01 2022         -90           Sep 02 2022         Feb 01 2022         213         LATE         Sep 02 2022         Dec 01 2022         -90 |  |

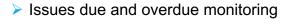
## Feature Percentage of completion and maturity levels A-Spice Issue Unresolved Resolved A Spice Issue

|  | PAM  | typ                       |    | issues<br>EPIC | /<br>Created<br>issues<br>EPIC | PAM<br>Maturity<br>Level | Actual<br>start | Target<br>start | Actual/Target<br>start | start<br>WARNING | Actual<br>end | Target<br>end | Actual/Target<br>end | end<br>WARNING | Issue<br>Status | Completion<br>Rate | status         |
|--|------|---------------------------|----|----------------|--------------------------------|--------------------------|-----------------|-----------------|------------------------|------------------|---------------|---------------|----------------------|----------------|-----------------|--------------------|----------------|
|  |      | PAIVIS                    |    |                |                                |                          |                 |                 |                        |                  |               |               |                      |                |                 |                    |                |
| + AWZI-35 Motor and inverter<br>sensor and functional<br>diagnostics       |      | Spice<br>PAMs             | re | 6              | 1/7                            | Open                     |                 | Nov 25 2021     |                        |                  |               | Mar 30 2022   |                      |                | Open            | 14.29%             | Open           |
| + AWZI-79 E-Motor torque, sper<br>and voltage control                      | ed + | F All A-<br>Spice<br>PAMs | re | 2              | 1/3                            | Open                     | Feb 22 2022     | Nov 29 2021     | 85                     | LATE             | Feb 22 2022   | Dec 03 2021   | 81                   | LATE           | Closed          | 33.33%             | Closed         |
| + AWZI-85 Closed loop Flux<br>weakening operations                         | +    | F All A-<br>Spice<br>PAMs | re | 0              | 1/1                            | Closed                   | Feb 22 2022     | Nov 29 2021     | 85                     | LATE             | Feb 22 2022   | Apr 01 2022   | -38                  | IN ADVANCE     | Closed          | 100.00%            | Closed         |
| + AWZI-87 SVPWM voltage<br>modulation with variable<br>switching frequency |      | F All A-<br>Spice<br>PAMs | re | 0              | 1/1                            | Closed                   | Feb 22 2022     | Nov 29 2021     | 85                     | LATE             | Feb 22 2022   | Dec 03 2021   | 81                   | LATE           | Closed          | 100.00%            | Closed         |
| + AWZI-377 Safety Monitoring   |      | F All A-<br>Spice<br>PAMs | re | 8              | 0/8                            | Open                     | May 03 2022     | Jan 03 2022     | 120                    | LATE             |               | Oct 13 2023   |                      |                | Open            |                    | In<br>Progress |
|  |      |                           |    |                |                                |                          |                 |                 |                        |                  |               |               |                      |                |                 |                    |                |



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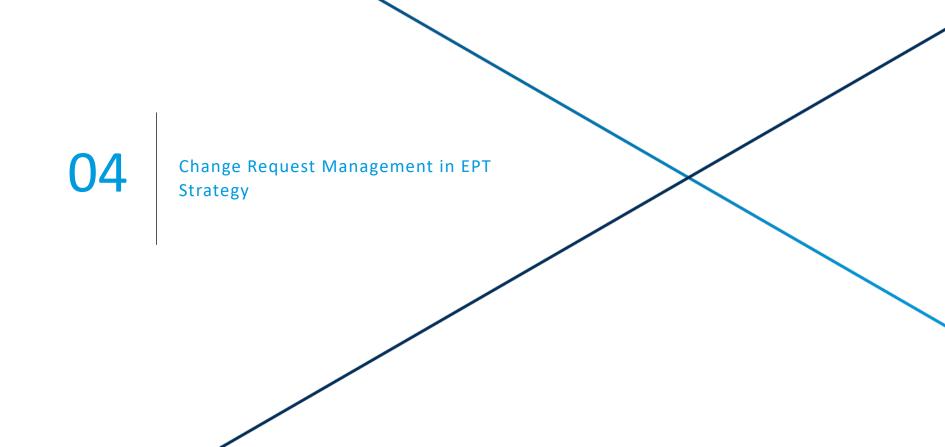
## Activity Monitoring: eazyBl<sub>cont'd</sub>





|                          | Issues<br>created | Issues<br>resolved | Overdue<br>Issues | Issue<br>open % | Issue<br>resolved % | Overdue<br>issues % | Overdue<br>open<br>issues % | Overdue<br>resolved<br>issues % | Issues<br>without<br>estimation % | Issues<br>with<br>logged<br>hours % | Issues<br>without<br>scheduling % |
|--------------------------|-------------------|--------------------|-------------------|-----------------|---------------------|---------------------|-----------------------------|---------------------------------|-----------------------------------|-------------------------------------|-----------------------------------|
| FuSa - Confirmation      | 24                |                    |                   | 100.00%         |                     |                     |                             |                                 | 91.67%                            |                                     | 8.33%                             |
| FuSa - Verification      | 12                |                    |                   | 100.00%         |                     |                     |                             |                                 | 83.33%                            |                                     | 8.33%                             |
| Handbooks/Project Plan   | 10                | 7                  | 3                 | 30.00%          | 70.00%              | 30.00%              | 20.00%                      | 50.00%                          | 60.00%                            | 40.00%                              | 10.00%                            |
| HW - ADF                 | 2                 |                    |                   | 100.00%         |                     |                     |                             |                                 | 100.00%                           |                                     | 100.00%                           |
| Performance Tests        | 4                 | 1                  |                   | 75.00%          | 25.00%              |                     |                             |                                 | 100.00%                           |                                     | 75.00%                            |
| Qly - Review             | 105               | 55                 | 10                | 47.62%          | 52.38%              | 9.52%               | 6.67%                       | 11.43%                          | 96.19%                            | 1.90%                               | 63.81%                            |
| Qly - SW-SJM             | 24                | 4                  | 15                | 83.33%          | 16.67%              | 62.50%              | 58.33%                      | 8.33%                           | 100.00%                           |                                     | 41.67%                            |
| Reports                  | 1                 |                    |                   | 100.00%         |                     |                     |                             |                                 | 100.00%                           |                                     | 100.00%                           |
| Smoke Tests              | 1                 | 1                  |                   | 0.00%           | 100.00%             |                     |                             |                                 | 100.00%                           |                                     | 100.00%                           |
| SW - Architecture Design | 423               | 163                | 28                | 61.47%          | 38.53%              | 6.62%               | 2.13%                       | 9.22%                           | 82.27%                            | 6.38%                               | 52.01%                            |
| SW - ASW                 | 25                | 17                 | 3                 | 32.00%          | 68.00%              | 12.00%              | 8.00%                       | 20.00%                          | 84.00%                            | 24.00%                              | 64.00%                            |

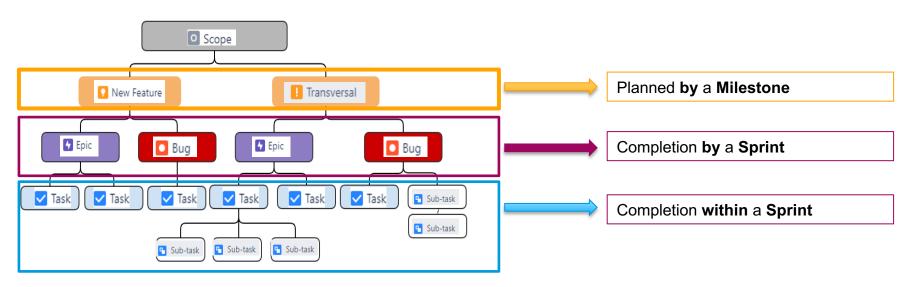
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## Change Management: Tracking the incremental releases Key message: every WP update is a change



Activities defined in the WBS shall be planned to be completed in a specific Sprint, with the overall Feature/Transversal activity being completed by a Milestone Increment



Each Feature or Transversal activity shall have the target to be completed by a specific Milestone Each Epic macro activity shall be planned to be completed by a Specific Sprint, taking into account the Milestone goals and the dependencies between teams

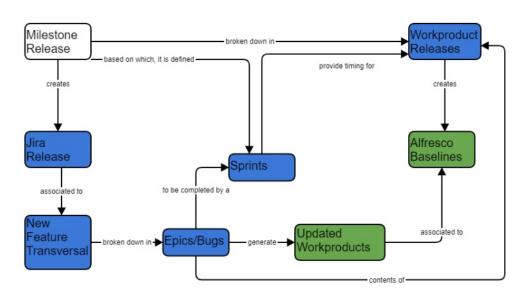


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## Change Management: Milestone Increment and Baseline



For each release made at the end of a **Milestone**, there shall be in Alfresco the storage of all released work-products (grouped in **Baselines**, one for each process)



Any change on a work product must always be linked to a task

Only planned changes may be committed to the Configuration Management Tools

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## Change requests: Change in scope



### A change request may be triggered either:

- **externally**: change to the scope requested by the client by official CR

- internally: change to the scope raised by the R&D team due to change in design, internal requirement change, feasibility

update on accepted scope

### 1.Collection:

- 1. Change request analysis
- 2. Describe the Change

#### 2.Evaluation:

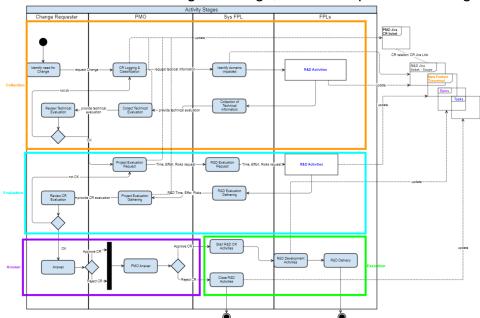
- Consolidate cost and Time for the Change
- 2. Confirm feasibility and have internal approval of the change

#### 3.Answer:

1. Obtain customer approval

#### 4.Execution:

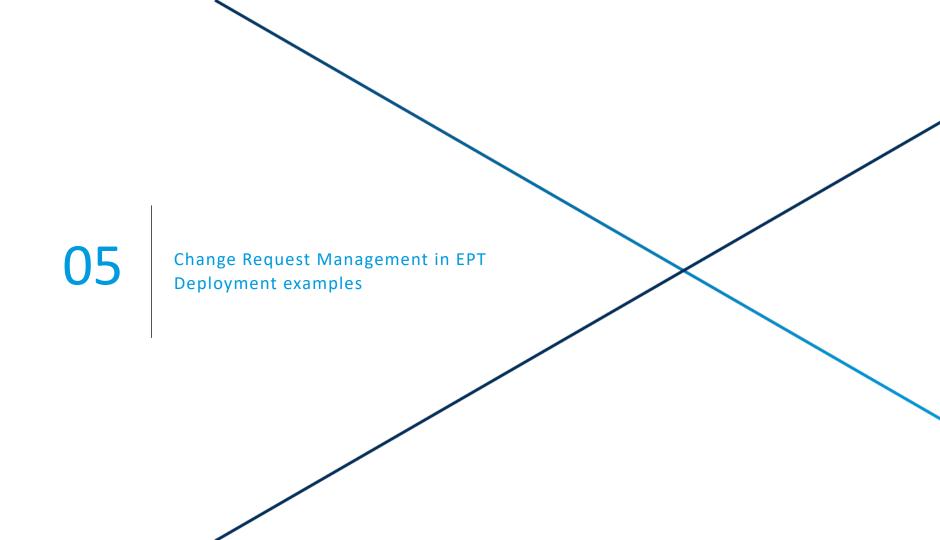
- 1. Release Change Documentation
- 2. Procurement of new parts
- 3. Change Validation



All above activities follow the same planning/scheduling as for the in scope ones



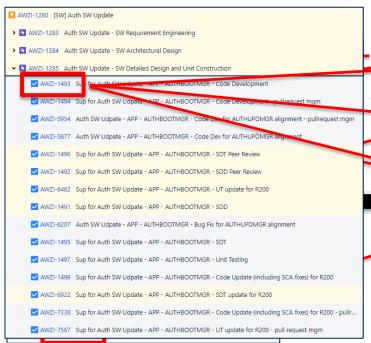
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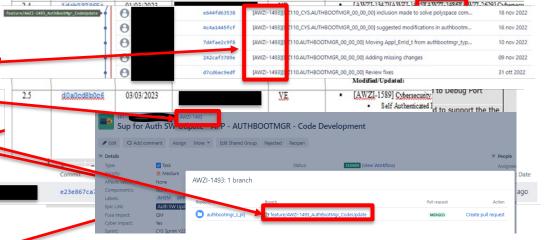
## Change management: deployment on a real example



### Assigned tasks



### Impacted WPs: ENACEs that the first fold (SAM/s Retignity) are stoosed in bit bucket (git)

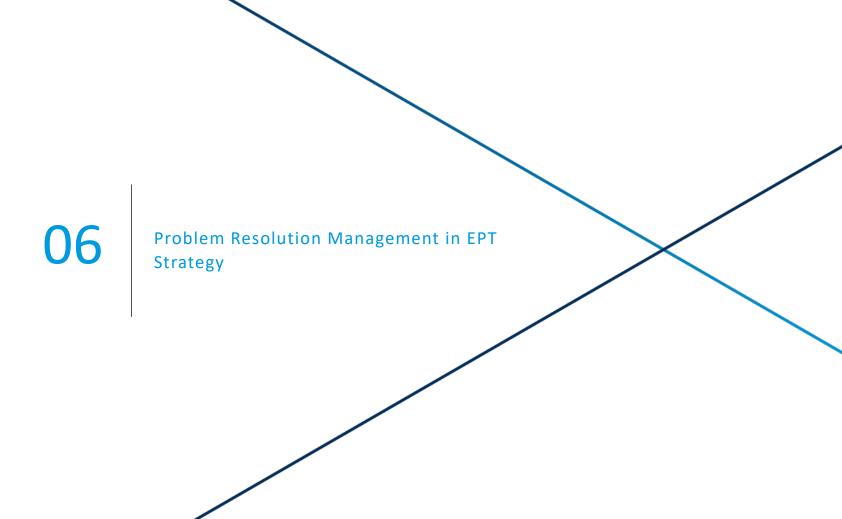


The Change Management concept may hold here too since:

- The change is uniquely identified (Jira Task-ID)
- The status concept is ensured (Jira Task)
- · Dependency between WPs is established
- Approval is achieved during planning session (sprints)
- · Traceability between impacted WP and change (task) is ensured

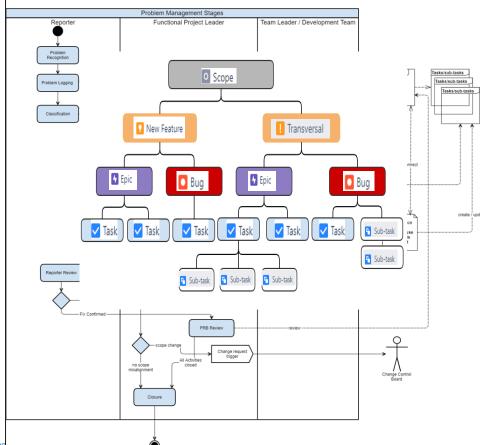
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## Problem Management – Detection and Analysis





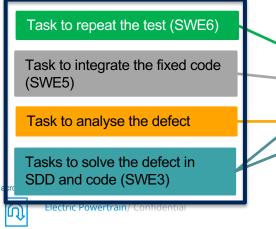
- Whoever detects a problem on a released work product, must always open a Bug
- ➤ The bug is on the same level of the WBS as an Epic and shall need to be broken down and planned in Tasks just like an Epic
- ➤ Effort estimation on the bug shall be performed during analysis phase and shall take into account: the effort to be spent on analysis, fixing, documentation update, and testing
- Analysis activities shall be tracked with dedicated Tasks, assigned to all team members that are providing inputs in the analysis
- ➤ To exit the analysis phase the team shall need to define a solution proposal

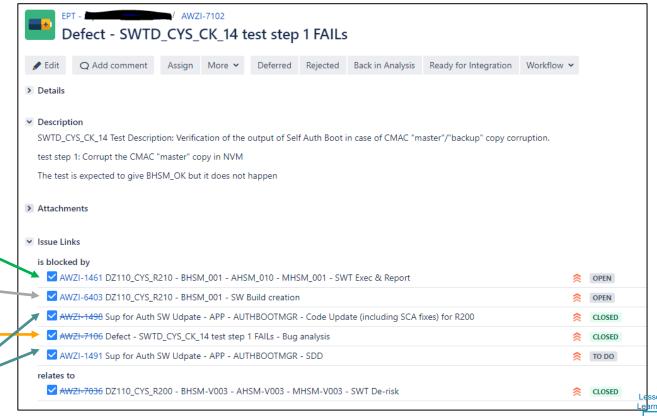
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# Problem management: deployment on a real example Defect at SW validation level



All these tasks are estimated (in terms of effort), planned and scheduled following the presented prj-mgm strategy

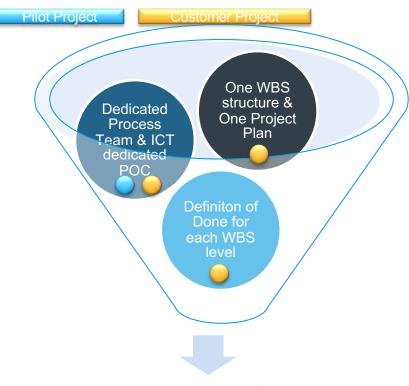




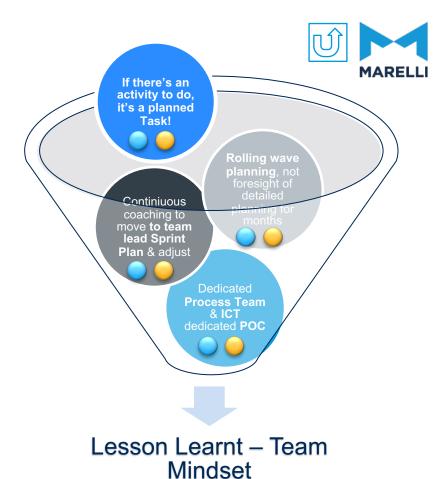
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## Lesson Learnt on Project Management



Lesson Learnt – Process Configuration



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