

# Kick-off meeting

## Presentation of the project plan

November 24, 2017 | Michael Klein & Klaus Bussmann

# Content

- Overview
- Work Breakdown Structure
- Timeline with milestones, deliverables and work stages

# Project Overview

## 4.2 Deliverable Item definition

The Partner shall provide its contributions in accordance with the following time schedule:

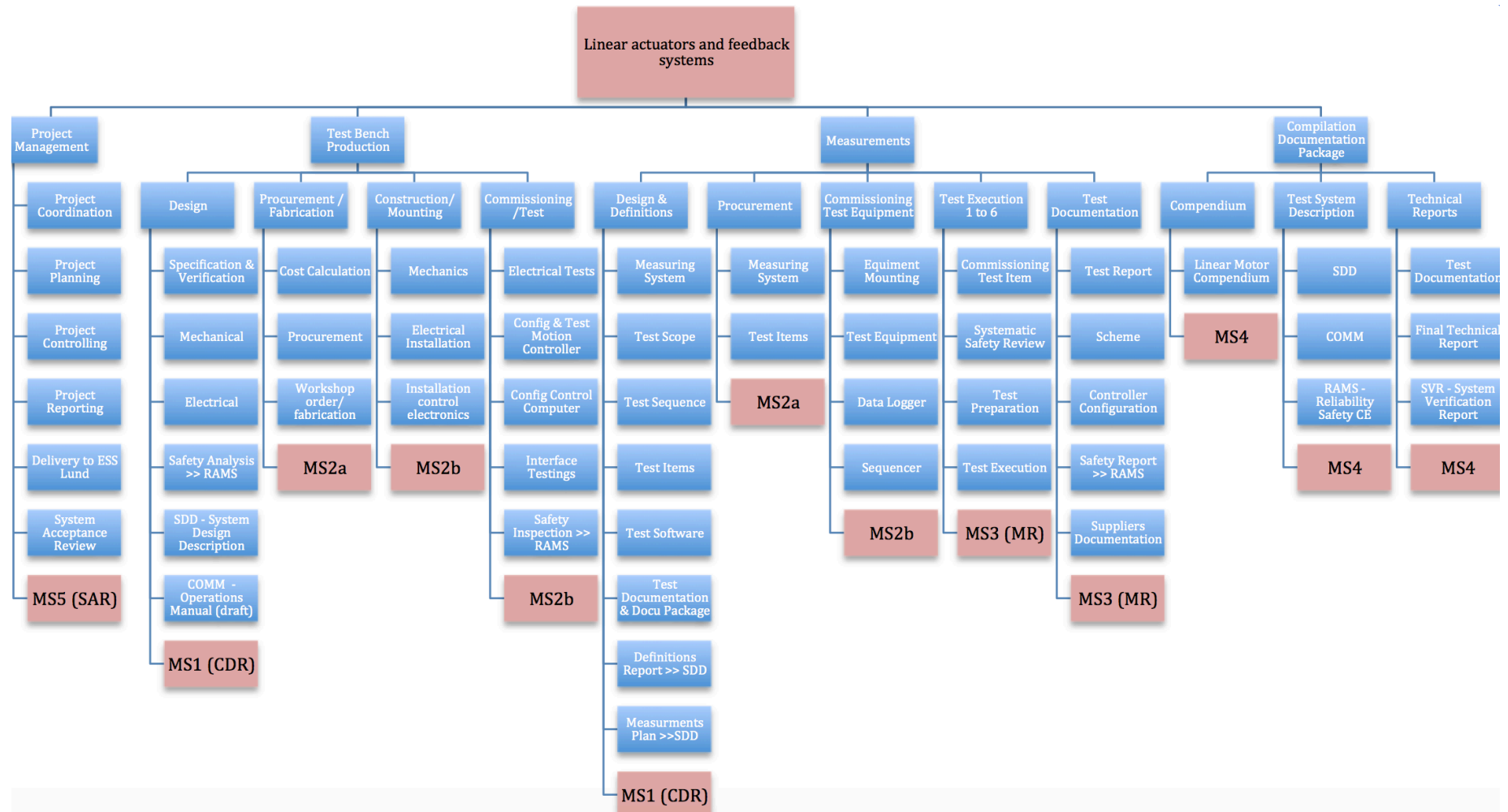
Scheduled start date: 01. November 2017

Scheduled end date: 31. May 2019

| Work Unit      | Deliverables                                | Delivery Deadline / Delivery MS |
|----------------|---|---------------------------------|
| 13.5.3.3.1.3.1 | Design & Definitions Documents              | 15. May 2018 / MS1a+b           |
| 13.5.3.3.1.3.2 | Test Benches, Measuring System & Test Items | 31. Oct 2018 / MS2a+b           |
| 13.5.3.3.1.3.3 | Test Execution & Documentation              | 15. Feb 2019 / MS3              |
| 13.5.3.3.1.3.4 | Complete Documentation Package              | 15. April 2019 / MS4            |
| 13.5.3.3.1.3.5 | Delivery to ESS Lund & System Verification  | 31. May 2019 / MS5              |

This overall contribution is set to the ESS Cost Book value of **311 kEUR**.

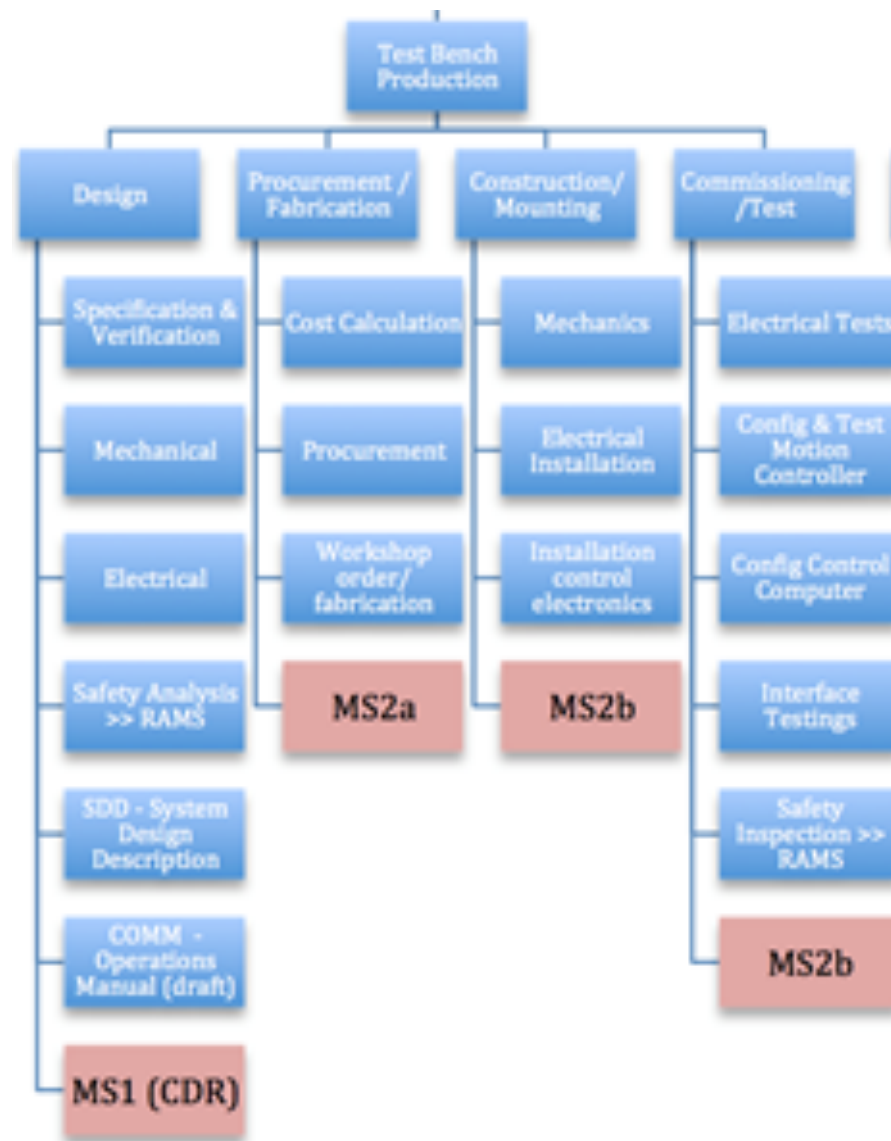
# Work Breakdown Structure - WBS



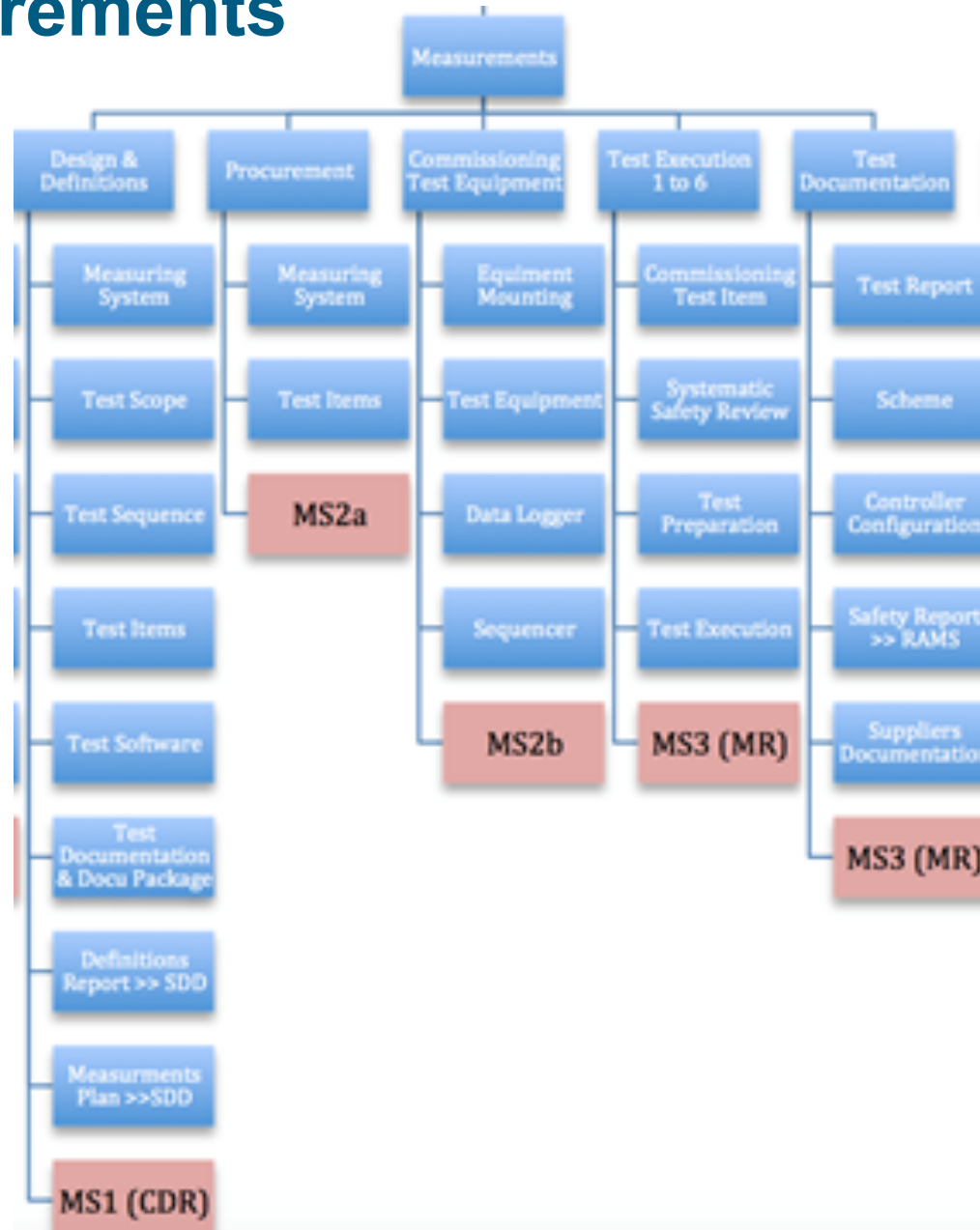
# 1. Project Management



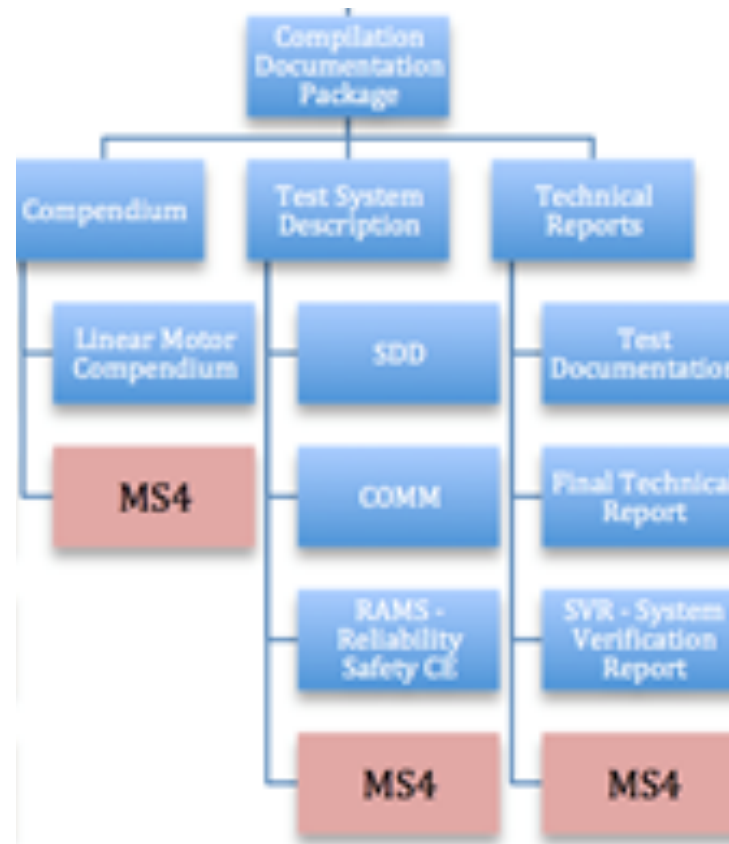
# 2. Test Bench Production



# 3. Measurements



# 4. Compilation Documentation Package

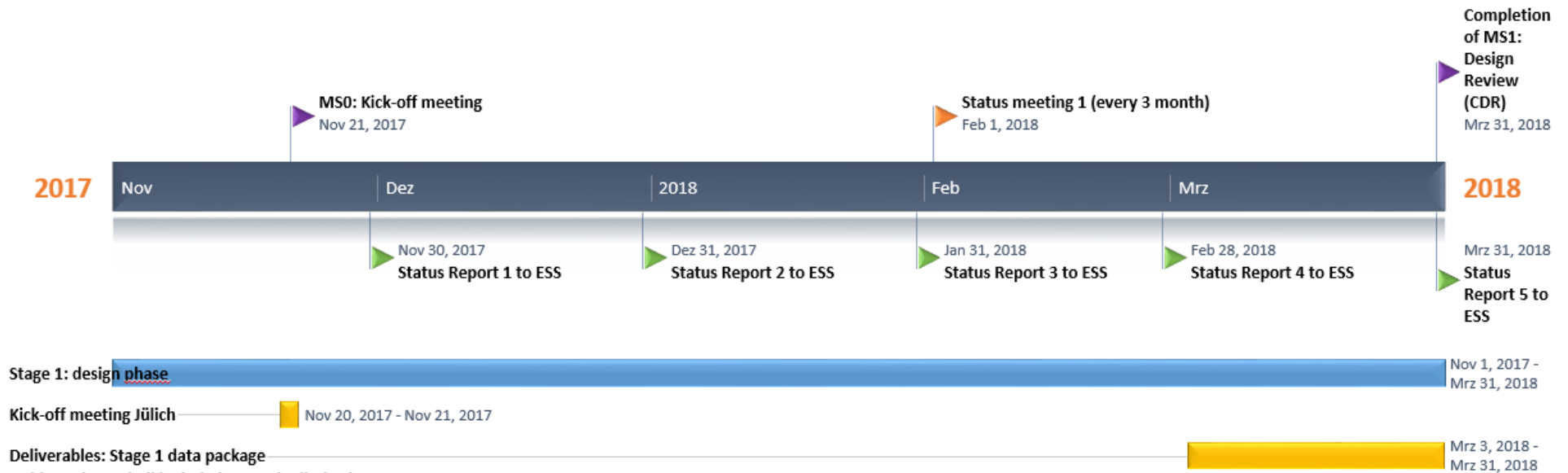




# Definition of Milestones (v1-0-1)

| Milestone ID | Short description              | Planned/<br>Baseline date | Location   | Weighting/Value | Comment |
|--------------|--------------------------------|---------------------------|------------|-----------------|---------|
| <b>MS0</b>   | Kick-off meeting               | T0                        | FZ Juelich | 0               |         |
| <b>MS1a</b>  | Procurement Review             | T0 + 14 weeks             | IKON14     | 0               | Stage 1 |
| <b>MS1b</b>  | Design Review (CDR)            | T0 + 28 weeks             | ESS Lund   | 40% / 124 kEUR  | Stage 1 |
| <b>MS2a</b>  | Procurement complete           | T0 + 40 weeks             | FZ Juelich | 0               | Stage 2 |
| <b>MS2b</b>  | Commissioning Equipment        | T0 + 52 weeks             | FZ Juelich | 0               | Stage 2 |
| <b>MS3</b>   | Measurement Review (MR)        | T0 + 68 weeks             | FZ Juelich | 45% / 140 kEUR  | Stage 2 |
| <b>MS4</b>   | Documentation Package          | T0 + 76 weeks             | FZ Juelich | 0               | Stage 3 |
| <b>MS5</b>   | System Acceptance Review (SAR) | T0 + 82 weeks             | ESS Lund   | 15% / 47 kEUR   | Stage 3 |

# Stage 1: Design phase (MS1)



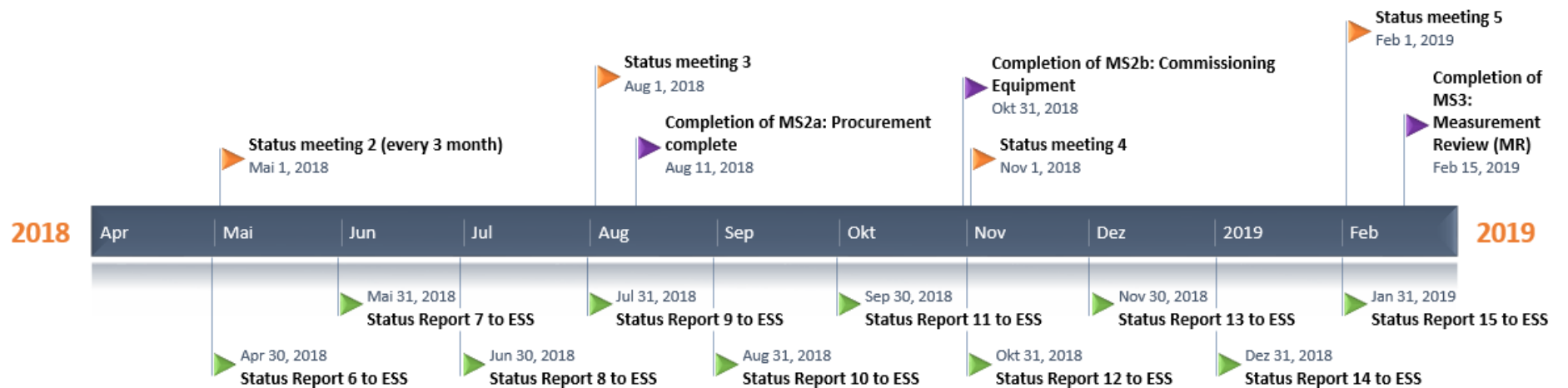
- This package shall include but not be limited to:
- Design Description (SDD) and related documents and data (system specification, system verification plan, mechanical & electrical drawings, P&ID, step-files, etc.) for test bench and measuring system
  - Test & Measurement Definition Report (as input to the Final Technical Report)
  - Safety Analysis Report as input to RAMS
  - Draft Component Operation and Maintenance Manual (COMM)

# Work to do:

## Stage 1: Design phase

- Market analysis and selection of control system, power supply and test items
- Compiling of System Specifications
- Mechanical and electrical design
- Electrical drawings Control system/power supply
- Scheduling for the manufacture, assembly and testing and establishing integrated logistics requirements and solutions for the future operation of the deliverables
- Safety Analysis
- Definition of test scope and test sequences
- Definition and design of measuring system
- Programming of Test & Measurement software (PLC + EPICS (GUI))
- Definition of the test documentation and the final documentation package
- Create documentation for the supply of the deliverables (Bill-of-Materials etc.)

# Stage 2: Realization and measurement (MS2 + MS3)



Stage 2: Realization and measurements Apr 1, 2018 - Feb 15, 2019

Deliverables: Stage 2 data package Jan 18, 2019 - Feb 15, 2019

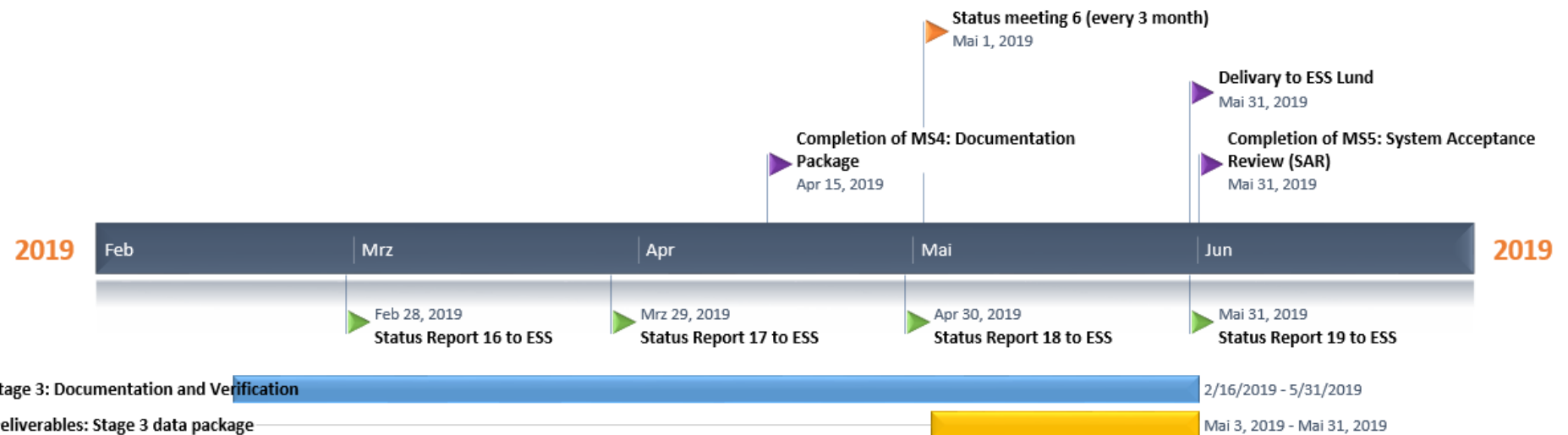
- This package shall include but not be limited to:
- "as-built" update of the SDD
  - Safety Inspection Report as input to RAMS
  - Program code for motor controller, measuring controller, test software, GUI etc.
  - Test Documentation for each test item (Test report, scheme, controller configuration, safety report, suppliers documentation & manufacturers declarations for test items)
  - Measurements raw data

# Work to do:

## Stage 2: Realization and measurement

- Procurement of components for test bench, measuring system and test items
- Taking over the documentation provided by the supplier
- Mounting & Commissioning of the test bench and measurements systems
- Carrying out the measurement activities as defined in the measurements plan in stage 1
- Finalize the program and possibly revise it during the measurements to correct errors and problems that might be noticed during the measurements
- Completion with the measurements review (MR)

# Stage 3: Documentation and Verification (MS4 + MS5)



Stage 3: Documentation and Verification

2/16/2019 - 5/31/2019

Deliverables: Stage 3 data package

Mai 3, 2019 - Mai 31, 2019

This package shall include but not be limited to:

- Linear Motor Compendium
- Test System Description (SDD design documents, drawings, P&ID, schemes, suppliers documentation etc.)
- Component Operation and Maintenance Manual (COMM)
- Reliability Availability Maintainability and Safety (RAMS)
- Compiled Test Documentations
- Final technical report
- Systems Verification Report (SVR)

FZJ – JCNS shall deliver at the completion of the project:

- 3 motor control test benches
- The measuring system
- 6 test item
- The documentation package

# Work to do:

## Stage 3: Documentation and Verification

- Compiling the Linear Motor Compendium
- Compiling the Technical Documentation (Test Systems Description and Technical Reports)
- Reporting and documenting in a System Verification Report SVR the outcomes of the verification activities
- Transporting the product to the ESS Lund and mailing or uploading its corresponding documentation to the ESS WU coordinator

**END**