UAP Platform
Progress Meeting
Introduction

- Design Update
- Questions from last meeting
- Manufacturing and inspection plan update
- Drawings planning
Design Update
Questions from last meeting

- **Minimal thread engagement for the M10 screw (Ball Joint) shall be:**
  - 1.3xD minimum in Aluminium (Re>110MPa / Rm>260MPa) – Insert could be necessary to avoid cold welding depending on Aluminium surface treatment.
  - 1.0xD minimum in steel or stainless steel

- **Proposed control loop for manufacturing drawings:**
  - Control 1 performed by Luca
  - Control 2 performed by Michel (introduction period - supervised by Mateusz)
Prototype test overview

- Vertical jack push test at 10kN
- Radial adapter push and pull test at 5kN
- Update will be necessary to introduce lateral proof load (angle TBD).
Prototype test overview

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## Identified MIP steps

<table>
<thead>
<tr>
<th>MIP Step</th>
<th>Description</th>
<th>Sampling</th>
<th>Load Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts Manufacturing</td>
<td>After manufacturing drawings review with the manufacturer</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
| Parts Inspection     | Subcomponents  
                       Dimensional Inspection  
                       Coating samples             | 100%     | N/A        |
| Assembly             | Based on step-by-step assembly procedure provided by CERN                   | N/A      | N/A        |
| Assemblies’ inspection | Dimensional inspection  
                       (interfaces / stroke)                        | 100%     | N/A        |
| Load Test            | In extended position  
                       Lateral load included             | 100%     | 150% Static |
| Dry Functional test  | Backlash and torque measurement  
                       Complete range  
                       1 cycle                           | 100%     | 0%         |
| Loaded Functional test | Backlash and torque measurement  
                       Complete range  
                       10 cycles                           |           | 100%       |

**Static**

**Dynamic**

- Vertical : 2 parts - spare
- Radial : 2 parts - spare
Questions from last meeting

• **Necessity to perform a caracterisation on more than 10 complete cycles?**
  • Acc. To MS, 10 full cycles already covers more that what is expected in the full lifetime.
  • Proposition is to use 2 spares of each with full 10 cycles loaded test.

• **Define report and holding points for the manufacturing – To be performed**
## MIP strategy - responsibility

<table>
<thead>
<tr>
<th>MIP Step</th>
<th>Option -0</th>
<th>Option-1</th>
<th>Option-2</th>
<th>Option-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts Manufacturing</td>
<td>Industry</td>
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<tr>
<td>Parts Inspection</td>
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<td>Industry</td>
<td>Industry</td>
<td>Industry - Repeated at CERN by sampling</td>
</tr>
<tr>
<td>Assembly</td>
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<td>Industry</td>
<td>CERN</td>
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<td>Load Test</td>
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<td>CERN</td>
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</tr>
<tr>
<td>Dry Functional test</td>
<td>Industry-100%</td>
<td>Industry – 100%</td>
<td>CERN</td>
<td>CERN</td>
</tr>
<tr>
<td></td>
<td>CERN – 100%</td>
<td>CERN – sampling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loaded Functional test</td>
<td>Industry - Sampling</td>
<td>CERN</td>
<td>CERN</td>
<td>CERN</td>
</tr>
</tbody>
</table>
MIP Strategy – Trade-off

- Dry tests do not require specific equipment → Sub-contractor and sampling by CERN
- Loaded and cycling test requires specific bench available at CERN → will be performed by CERN
- Corresponding strategy is Option 1.
# MIP strategy - responsibility

<table>
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<tr>
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Inclinometer interfaces to be provided:
  • Can be provided for next meeting (16/03/2022)
  • Interfaces to be provided to Luca:
    • Installation
    • Wire
    • Interface Socket

Adapter interfaces to be freeze: 16/03/2022

To check that catproduct are provided in nominal position

Possibility to move longitudinal jack at the front?