

Conflict analysis

Proposition baseline for Vacuum equipment layout in the TASX/P1 environment.

Analysis of the proposal presented on March 31st, 2015

General comments

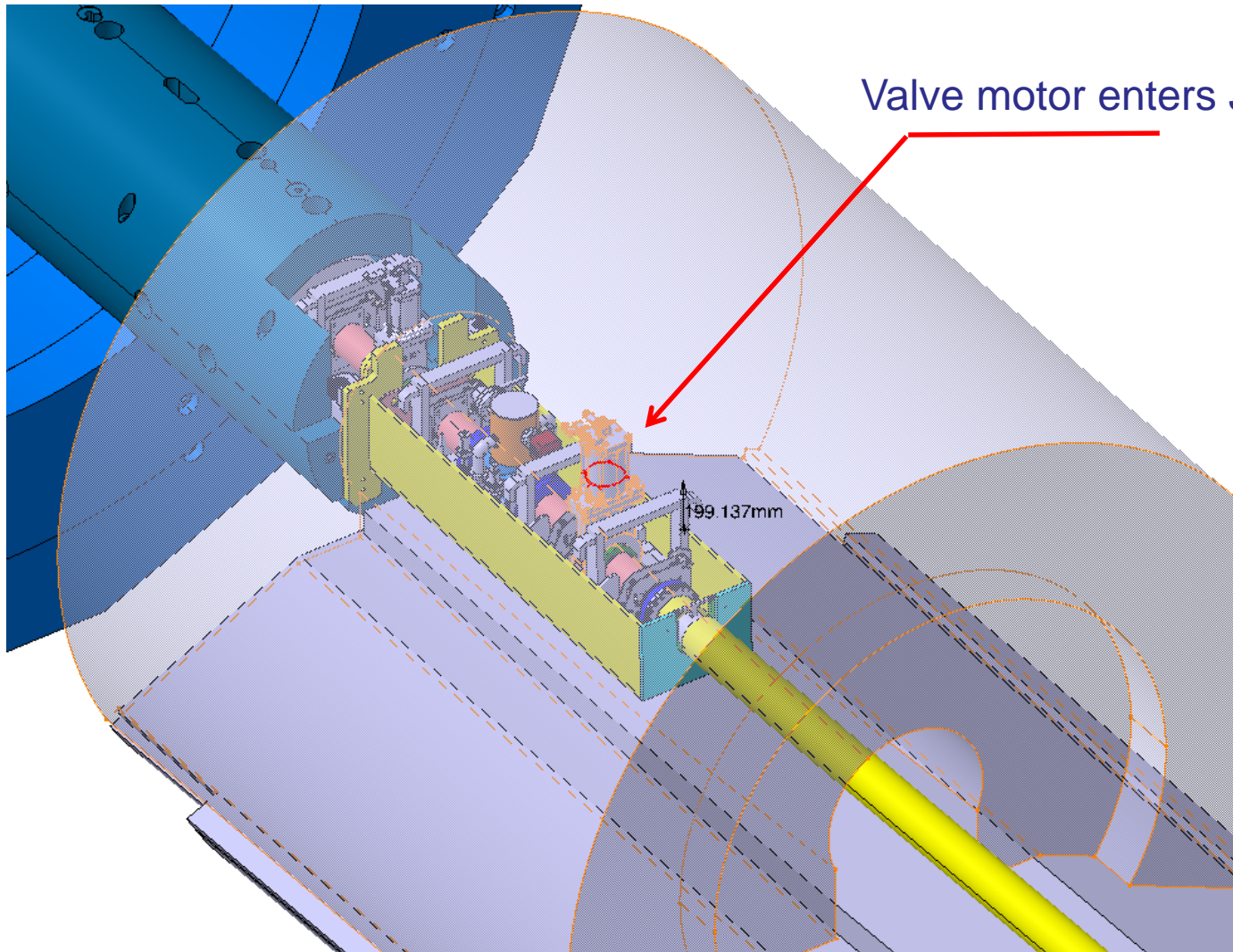


The analysis focuses on the distance from IP 17 m \rightarrow 18.56 m

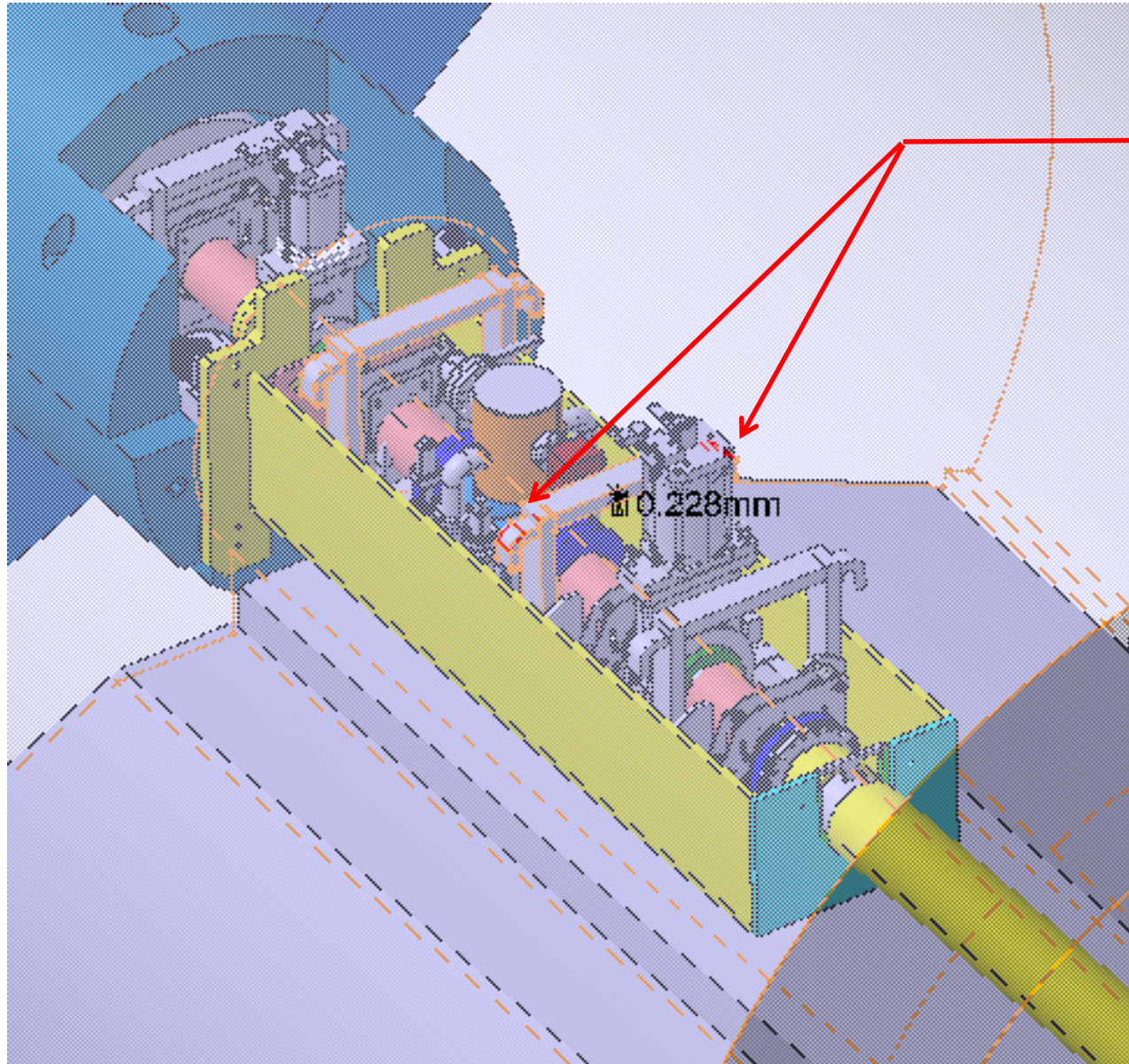
- ✓ For distance $<$ 17 m, the proposal makes no change wrt current layout
- ✓ For distance $>$ 18.56 m, inside the Monobloc TX1S, no ATLAS equipment except services from both vacuum chambers and LUCID

The analysis does not consider the trivial conflicts with LUCID and VJ cone:
These last two components are exactly positioned at the location where the new vacuum equipment should be installed.

Run configuration : conflict #1

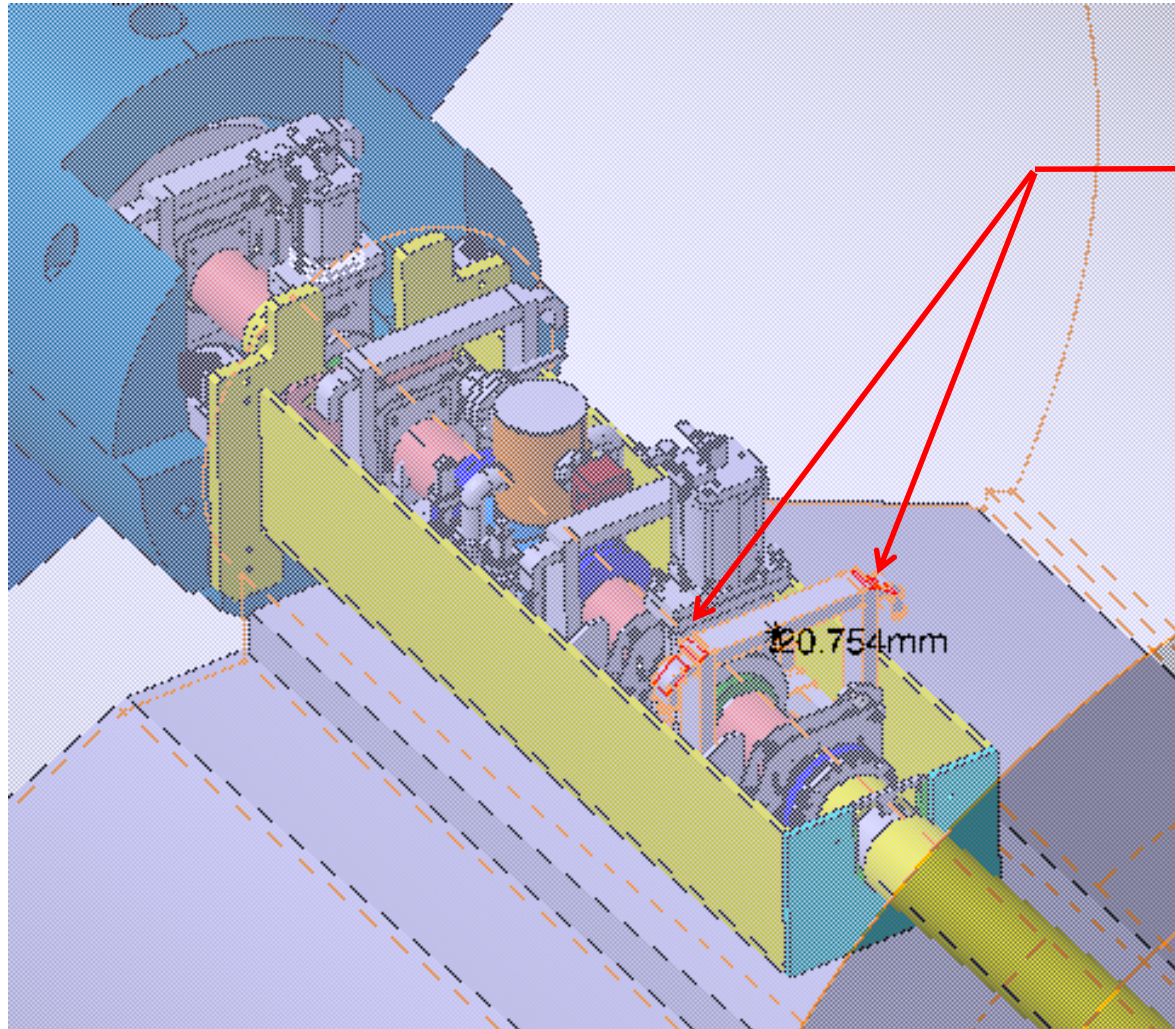


Run configuration : conflict #2



Lifting device enters JFC3
by about 10 mm

Run configuration : conflict #3



Lifting device enters JFC3
by about 20 mm

Elsewhere a **clearance of about 30 mm** is detected which is consistent with ATLAS policy regarding envelop.

Standard Opening configuration



The Standard Opening is the ATLAS configuration which is used on every winter technical stop. It is dedicated to medium duration interventions (typically 9 to 20 weeks) therefore none of the vacuum chambers is removed.

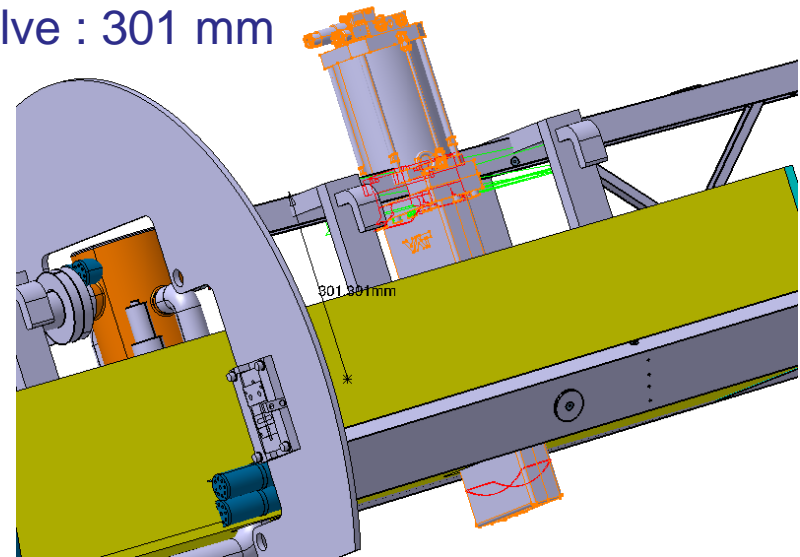
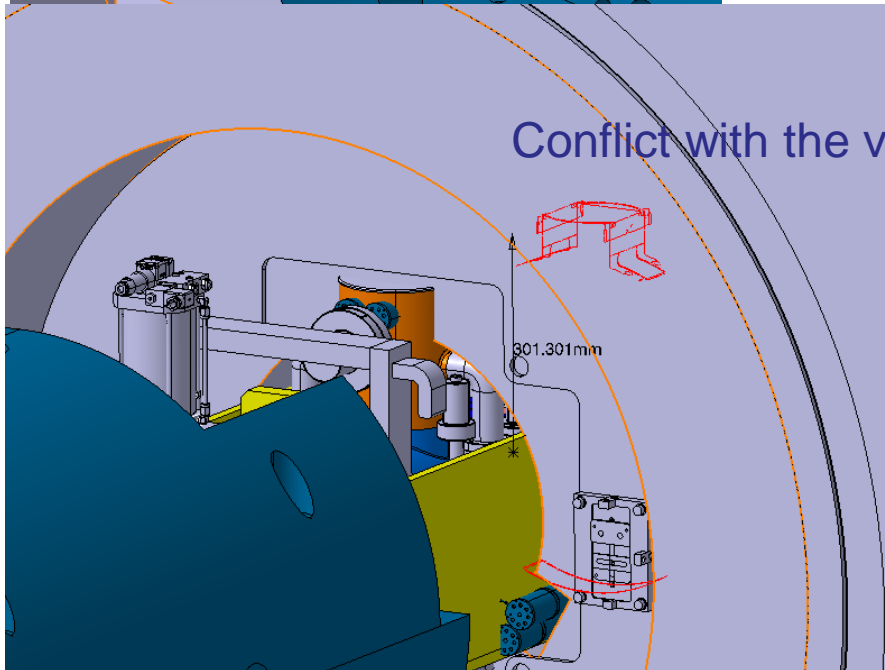
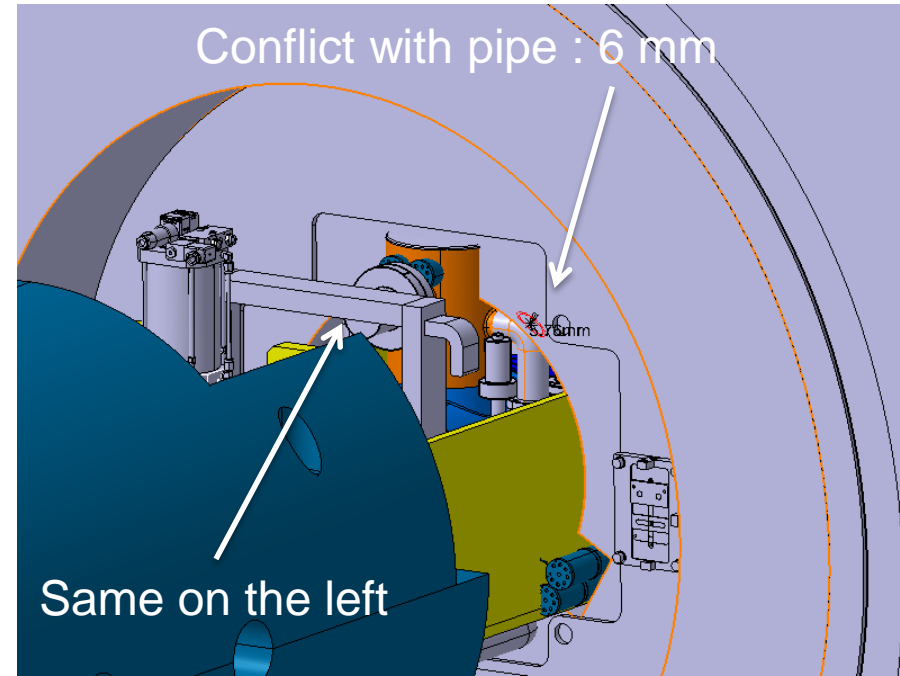
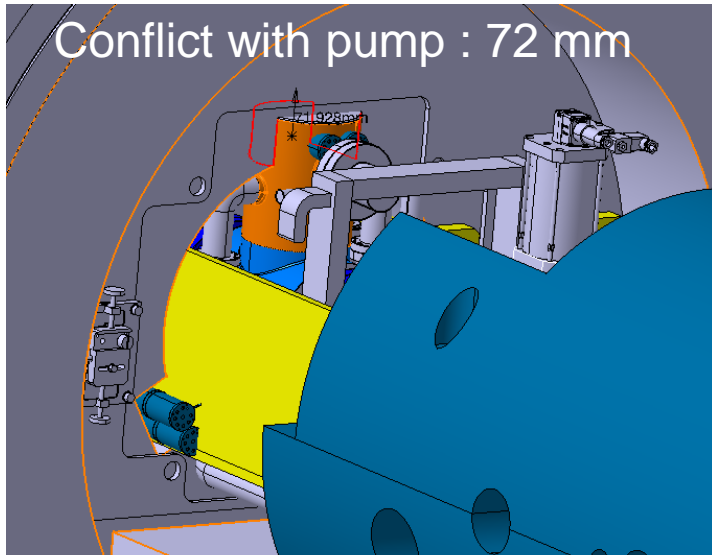
14 conflicts have been detected with ECT in the nominal position.

However, in order to take into account misalignment, re-positioning allowance and fabrication tolerances, it is mandatory to keep a clearance of 30 mm at least,

→ up to 28 the places are out of the criterion

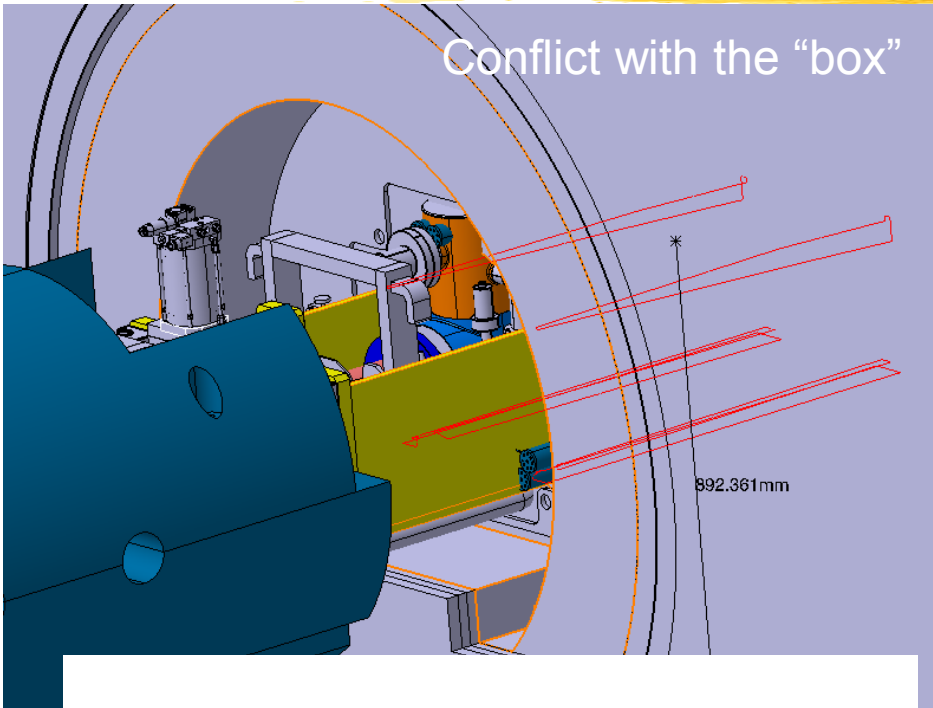
65 conflicts have been detected with the vacuum chamber supports inside ECT.

Standard Opening configuration

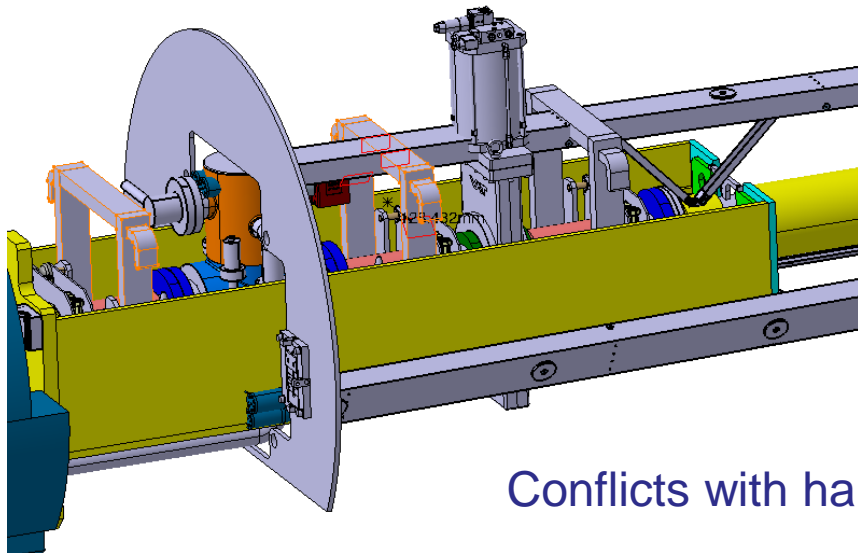
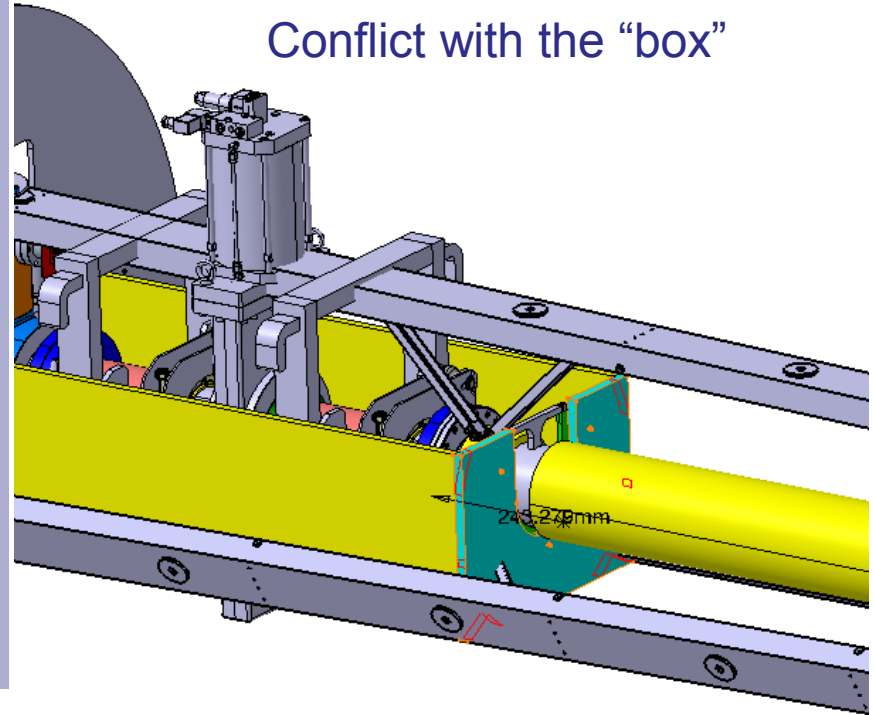


Standard Opening configuration

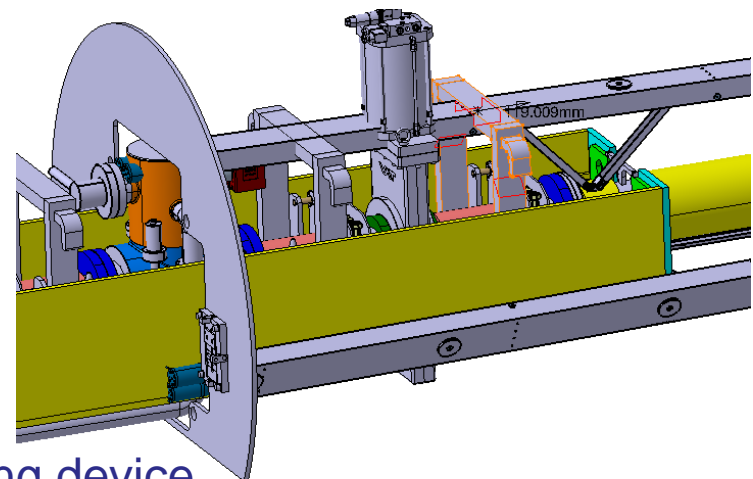
Conflict with the "box"



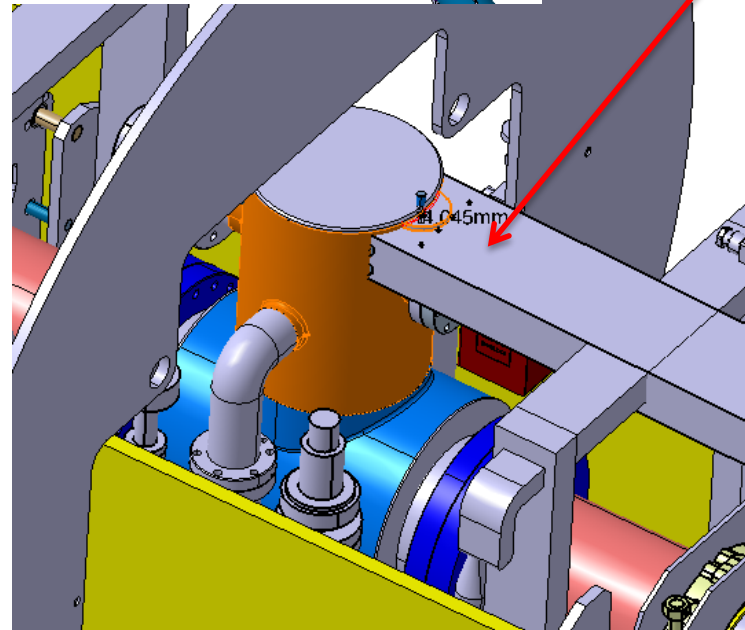
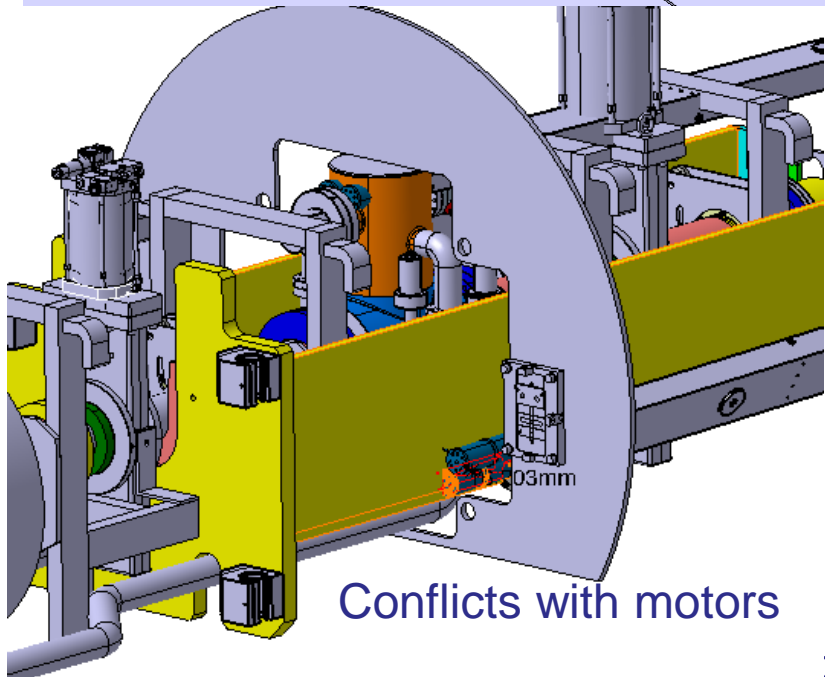
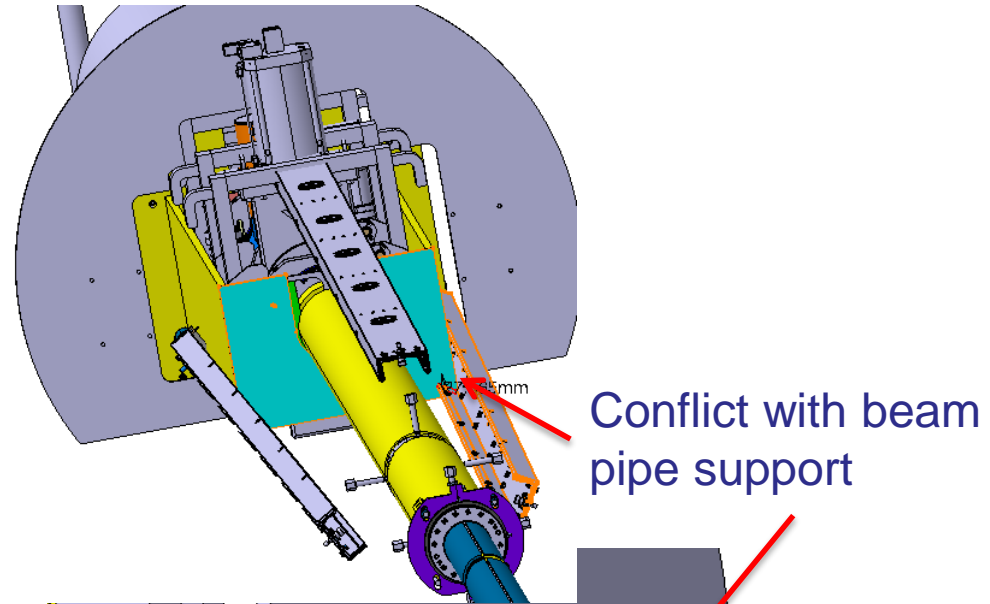
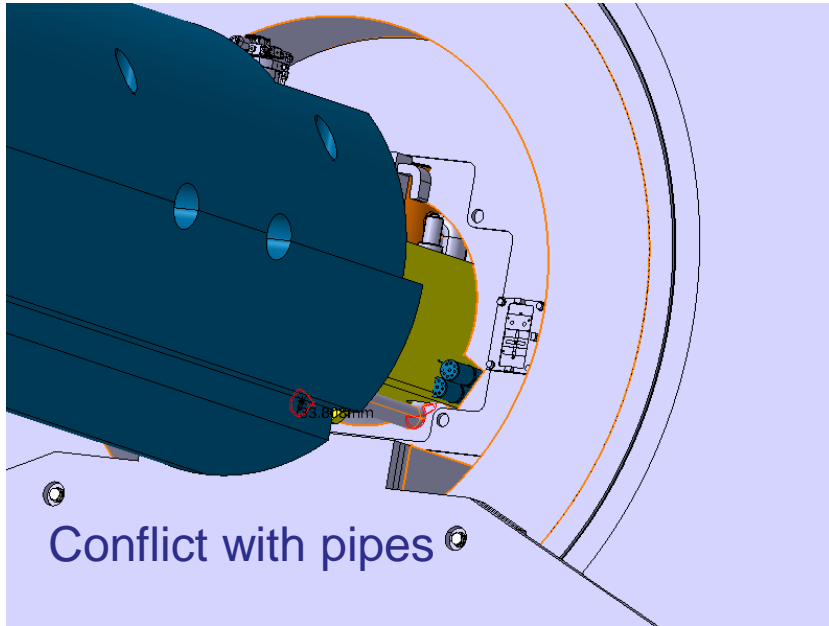
Conflict with the "box"



Conflicts with handling device



Standard Opening configuration



In Run position, 3 main conflicts have been detected, they could be solved by two ways:

1. Modification of the vacuum system (valve) and support frame
2. Modification of the shielding

However, regarding the problems to be solved in Standard Opening, the second does not make sense.

In Standard Opening, many conflicts have been detected (>80)

- Some could be solved by small modification either on the vacuum system or on the vacuum chamber supports
- Some are very large and cannot be solved thanks to small adjustments

Details can be understood using Catia model : ST0675611_01