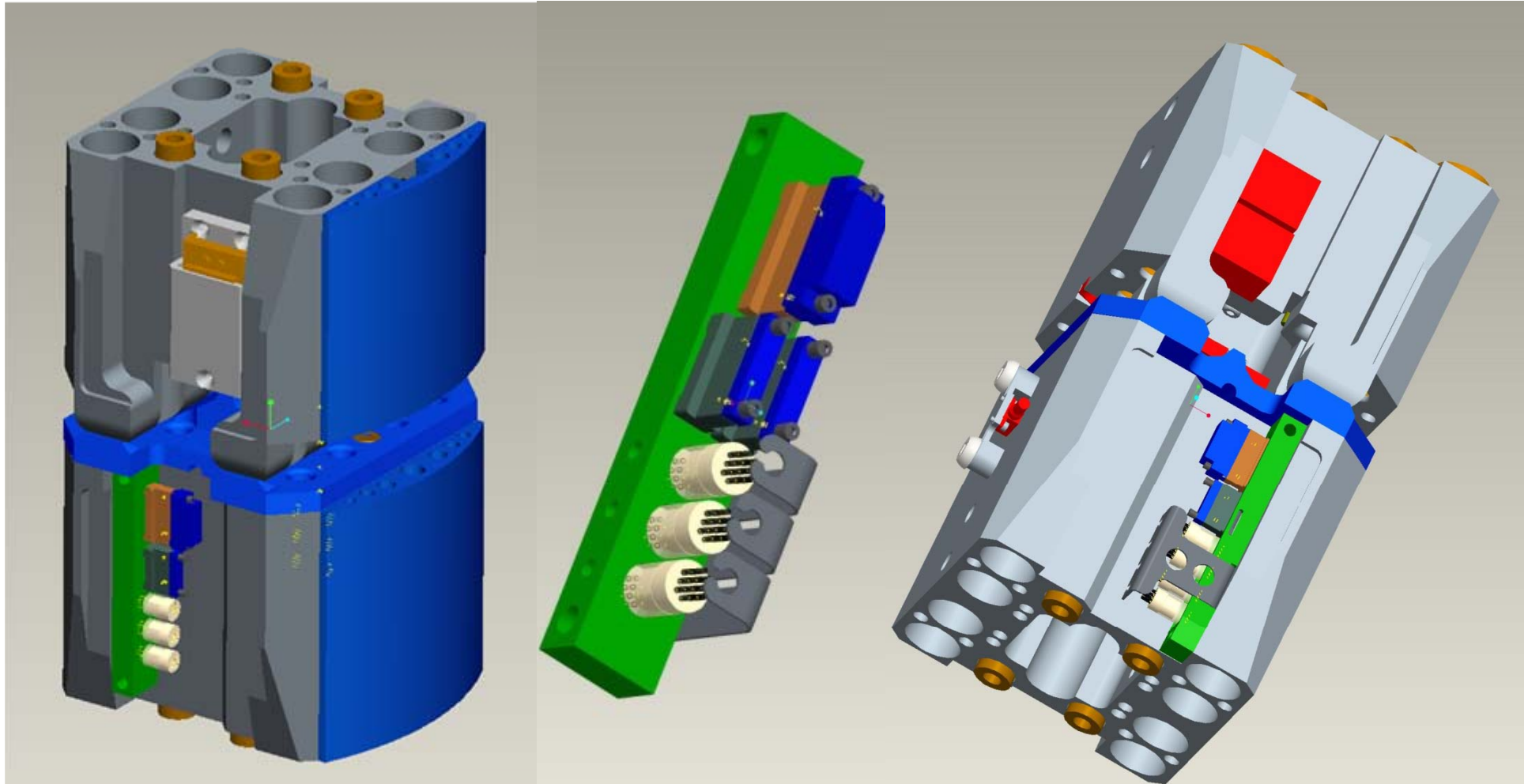
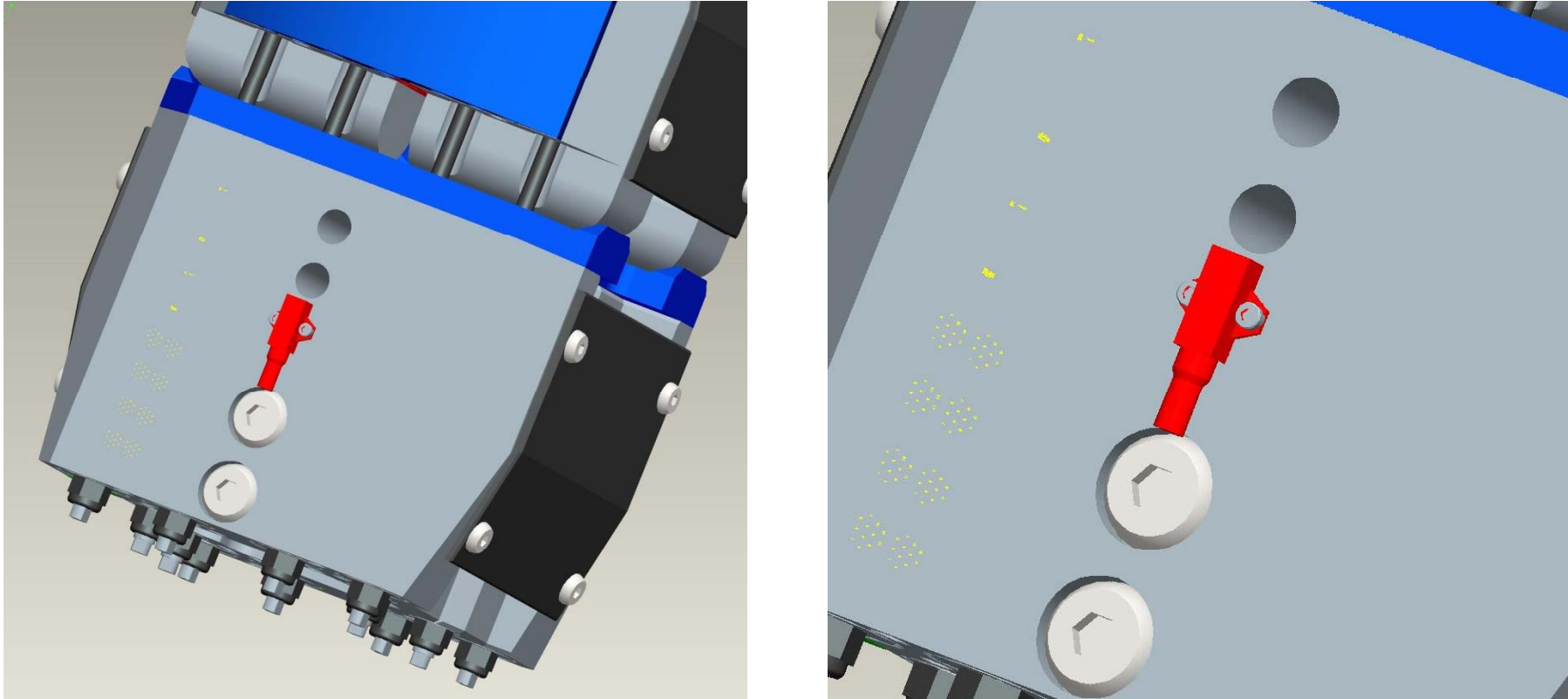


Integration Connector Blocks

TEG-054 PART 2

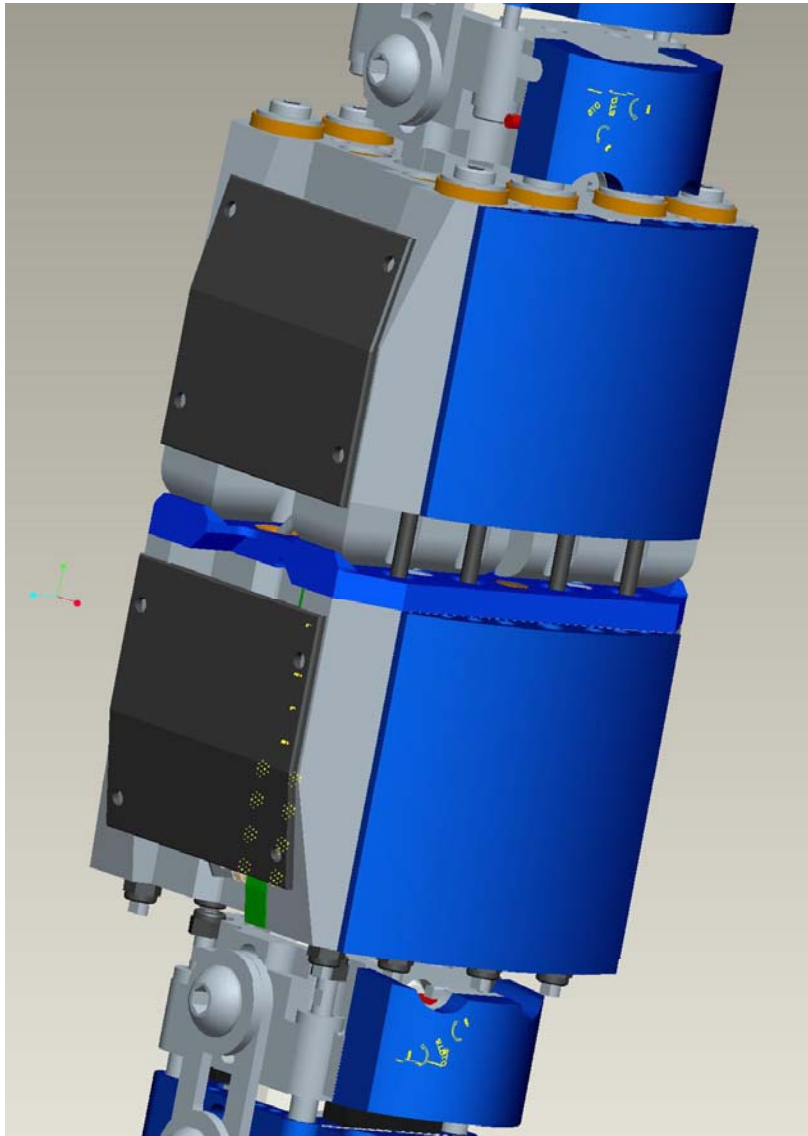


Single axis accelerometer x-direction for certification



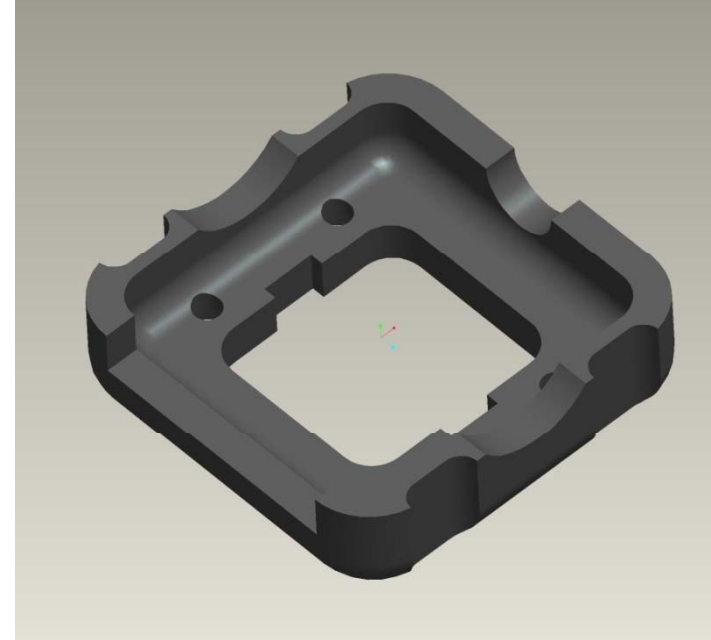
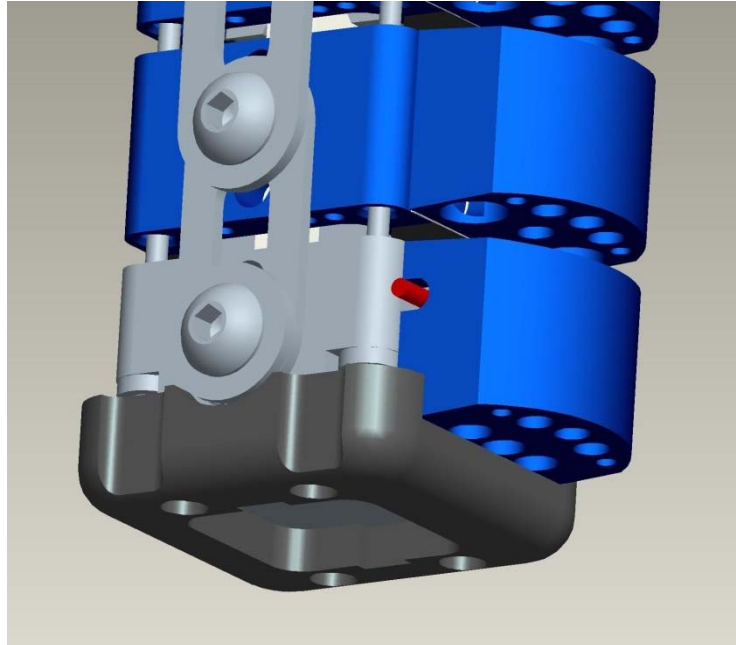
- Mounted behind Nylon Impact Cover
- Threaded metal inserts to enable thread repair
- Measurement specialties M62, Endevco 7264,

Protective Covers on Side Cavities



- Side cavity covers are 2mm thick and bent for strength
- Cable mounts can be placed on inside

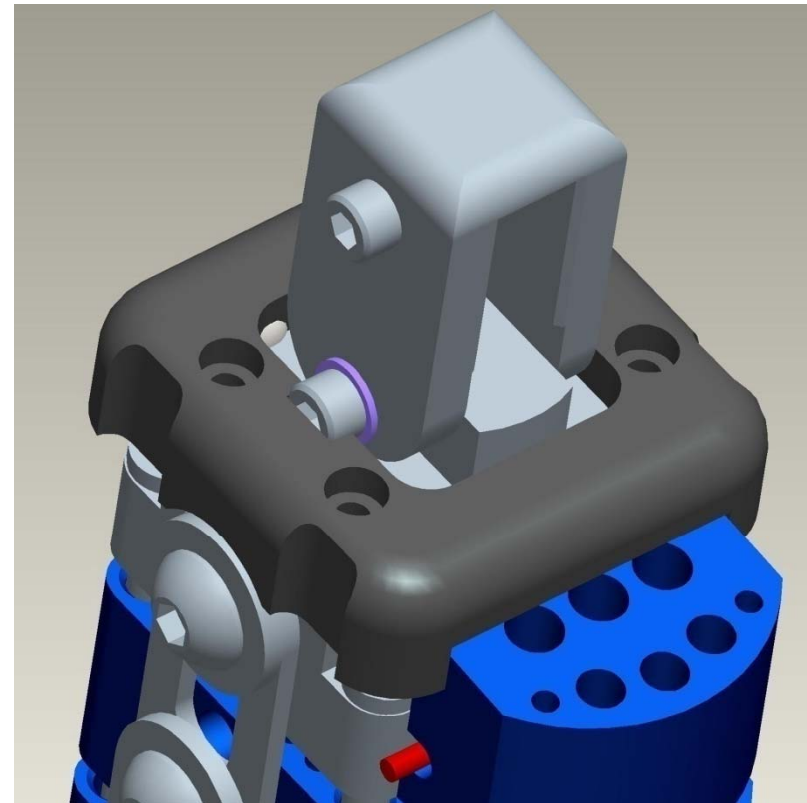
Protective rubber bumpers to distal and proximal ends



- Rubber bumper mass 0.04kg each
- Mounted with Nylon screw for mass reduction
- Provision of threads for catch ropes
 - Catch ropes and bumper may be used simultaneously
 - But may need special fixture

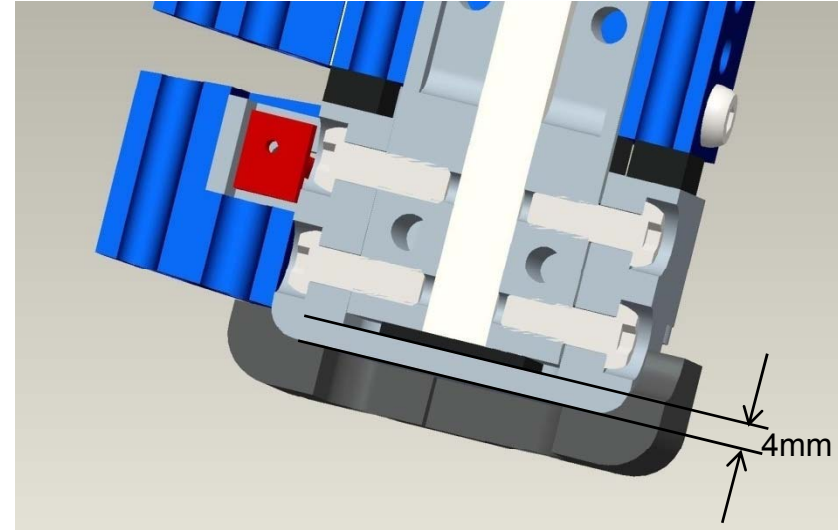
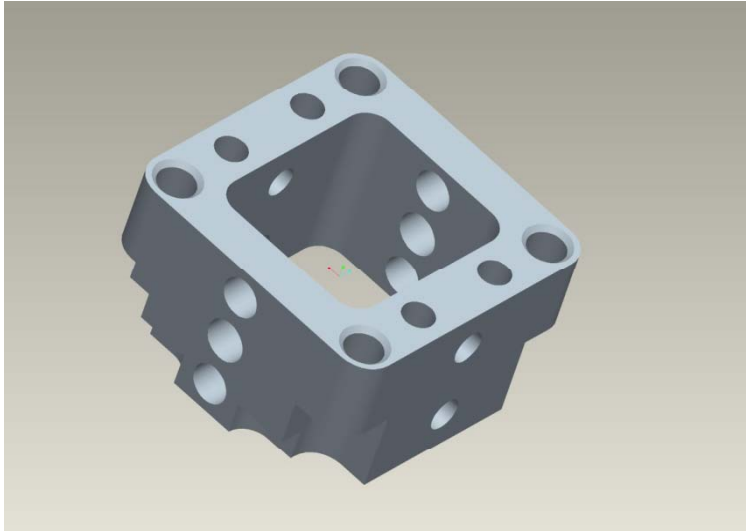
Top of femur launching Bracket

- Lower pivot is clamped
- Function 1: protection of bracket under secondary impact
- Function 2: angle adjustment to achieve stable suspension on ejection platform
- Bumper on distal femur
 - Cut outs for cables



Segment C1A_AL

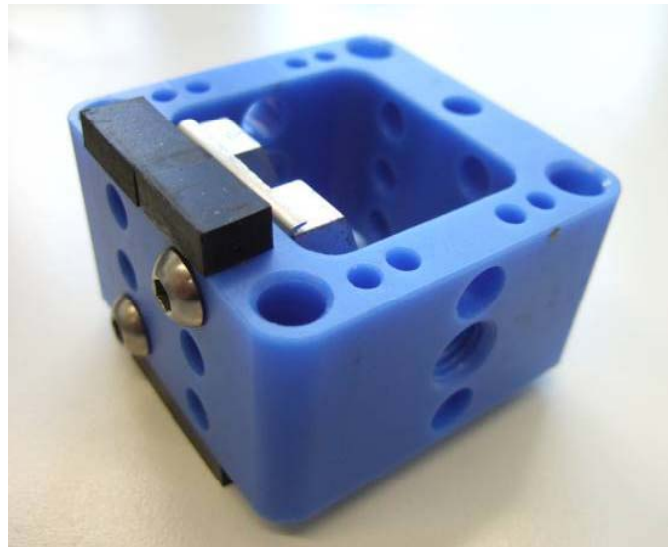
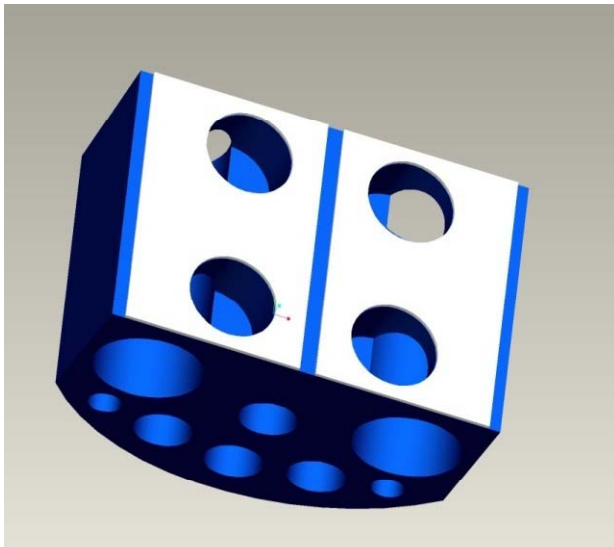
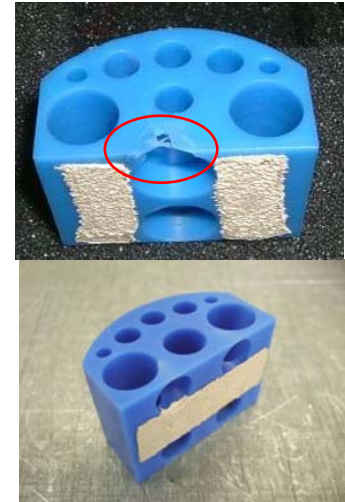
Bottom tibia segment C3_AL



- Increase strength of C1A_AL:
 - Counter bores removed
 - Additional mass +10gr
- Increase strength of bottom tibia segment C3_AL
 - Increase bottom to 4mm thickness
 - Additional mass +18gr
- Shorten the bone by 2mm

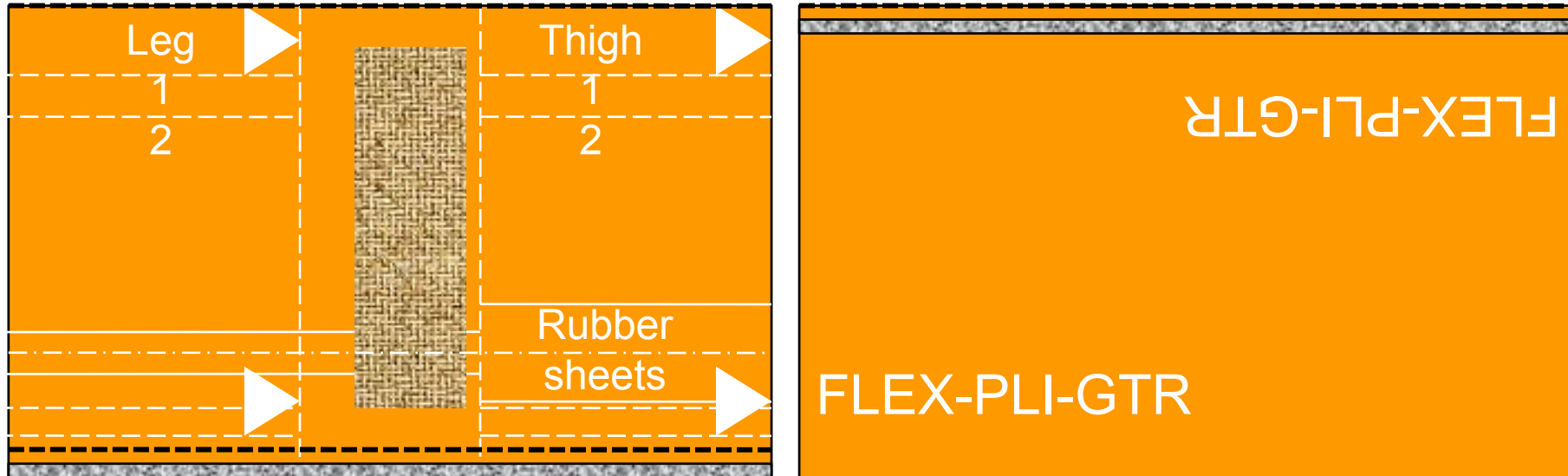
Proposed impact cover designs

- FLEX-PLI-GT mounting maintained with double sided tape
- Button head screws maintained
 - To allow dislocation to protect against overload
 - Hole centers reduced in to avoid thin section at edge
 - Minimum section 1.7mm

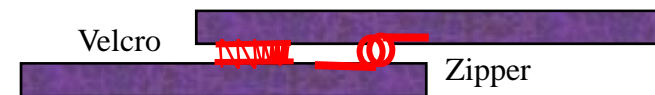
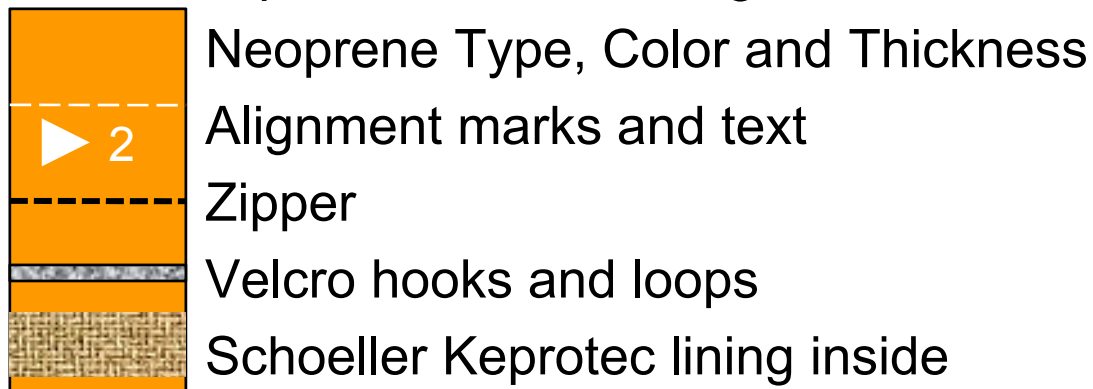


Form: 07-163
Revision: A
16 - May 07

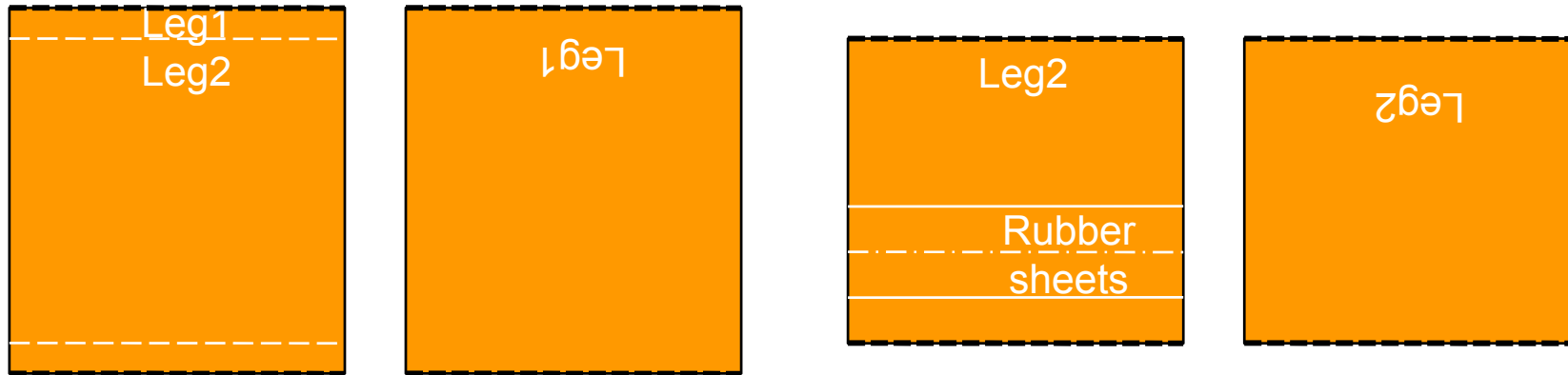
Rubber and Neoprene sheets



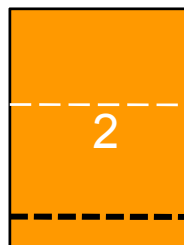
Outer Neoprene Sheet with alignment marks to aid assembly



Rubber and Neoprene sheets



Inner Neoprene Sheets (only Leg shown, Thigh similar)

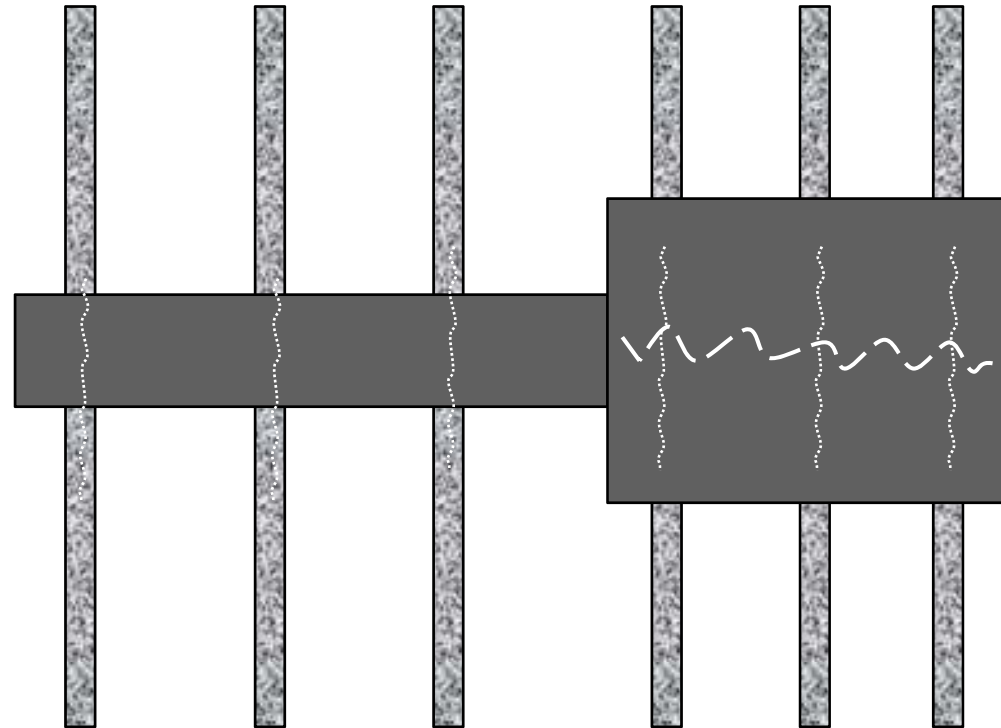


Neoprene Type, Color and Thickness

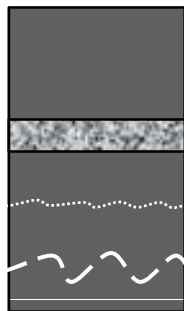
Alignment marks and text

Zipper

Rubber and Neoprene sheets



Rubber Sheets



Rubber sheet Type, Hardness and Thickness
Velcro hooks and loops tape
Velcro to rubber sheet adhesive
Adhesive between rubber sheets

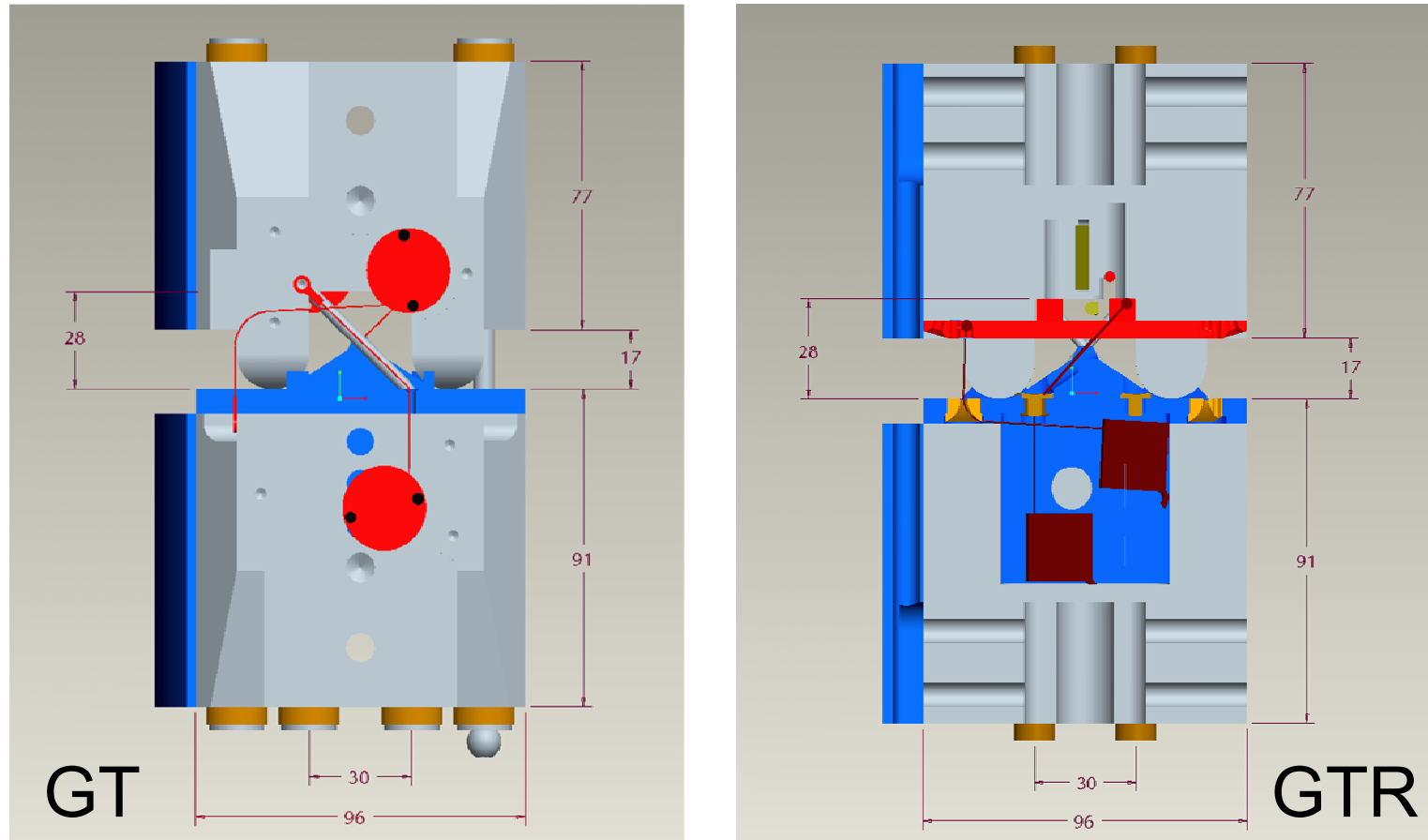
Glass Fiber Bone Specifications

- Glass Fiber Reinforced Plastic
- Supplier PL Alloy Japan
- Material specs JARI SPEC F45
- Bone painted to retain glass fibers
 - JARI please provide specs

Comparison GT - GTR

- The project aims at keeping the dynamic response of the GTR as close as possible to current GT version
- GTR aimed to maintain GT Mass and Mass distribution
 - FLEX-GT mass breakdown study was performed
- GTR aimed at maintaining GT dynamic response
 - FTSS will perform material characterization tests
 - GTR materials will be as close as possible
 - Bone material and dimensions will remain the same
- Changes in the knee will not affect bending moment
 - Lateral Ligaments and springs and spacing in y- direction (impact) remain the same
 - Cruciate ligaments total force may slightly change, spacing in y- direction and pull direction remain the same
 - Elongation sensors MCL, PCL, ACL, LCL remain in line with ligaments, position projected to mid knee position

Comparison GT - GTR



- GT and GTR cruciate ligament and spring location remain the same
 - All dimensions and interactive geometry remain the same
- Accommodation connectors and DAS -> larger space in the side -> mass compensated

Mass specs comparison

- Mass spec comparison
 - To be completed
 - GT, GTR standard, GTR full options
- Some uncertainties
 - DAS Weight, cables
- Knee CAD model within +/- 30 gram from GT version
- Tibia + 21 grams
 - With options
- Femur +23 grams
 - With options

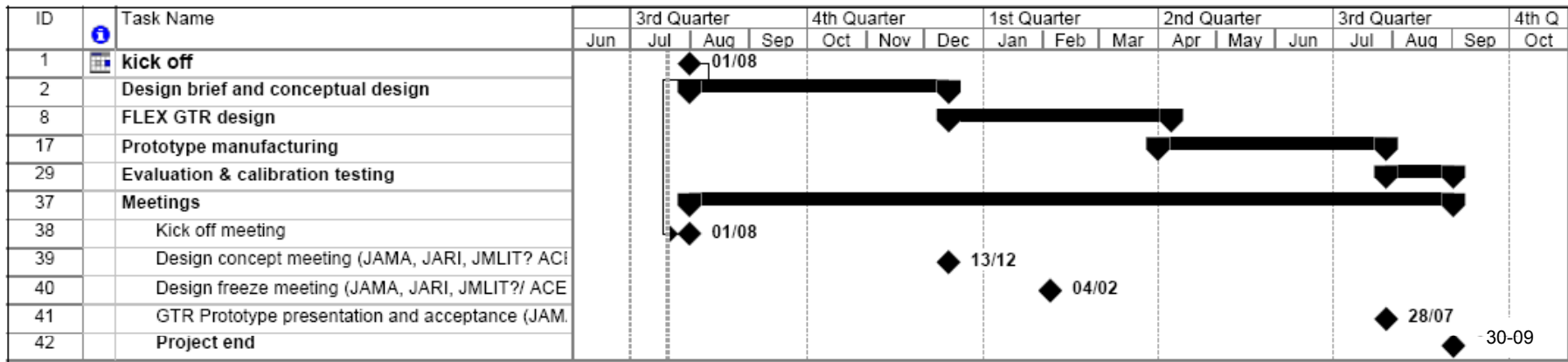
**UPDATE with
summary when
complete**

Further Activities

- Complete mass spec comparison
- Round all sharp edges in wire route
- Development of User Manual, including procedures, training..
- Material sourcing and tests
 - Characterize dynamic response of current and new source materials
 - Neoprene, Synthetic rubber 30 Shore A, 45 Shore A

Schedule, future activities, etc.

- Inform FLEX-TEG members development status end February
- Drawings February 22nd – mid April
- 6th FLEX-PLI-TEG meeting, March 31st Germany
- Prototype Manufacturing 1st April – 28st July
- Prototype Testing and calibration 29 July- End September
- GTR prototype Delivery End September 2008



Design frozen