Flex-GTR (Mass, COG, Inertia) Tolerances

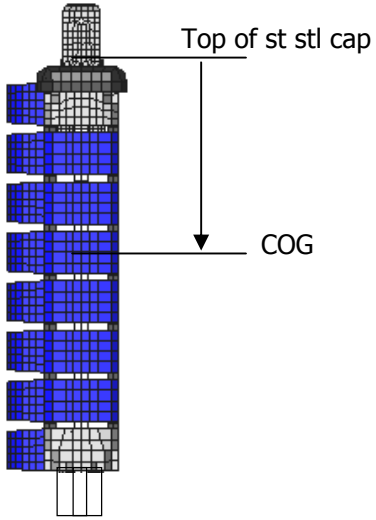
Available Information and Proposal for Requirements

TEG-122
2 Dec. 2009
JAMA-JARI
with FTSS communications

Femur

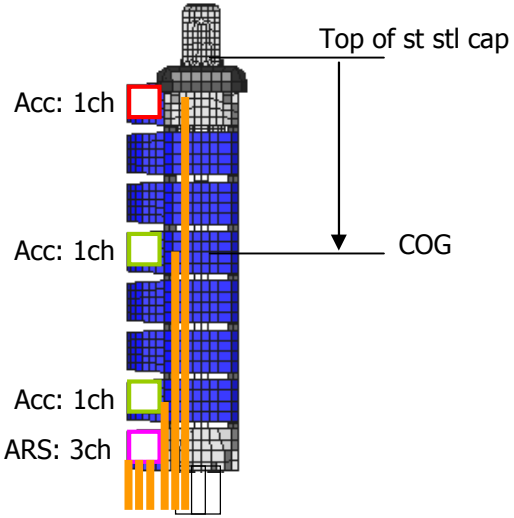
No Option

Basic



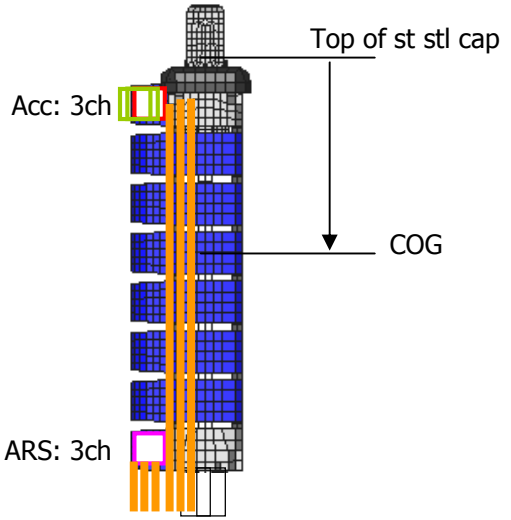
Option (Type 1)

Estimated Automaker Standard



Option (Type 2)

Estimated Worst Setting of Acc



Flex-GTR-proto, SN01

Flex-GTR-proto, SN03

CAD

CAD

CAD

CAD values: FTSS

Femur		No Option SN01	No Option SN03	No Option CAD	Option (Type 1) CAD	Option (Type 2) CAD	BASE Values	Ref.	+/-5 % Upper Limit	+/-5 % Lower Limit
Mass	(kg)	2.445	2.475	2.441	2.496	2.496	2.46	AVERAGE	2.58	2.34
COG	(mm)	159.3	158.7	157.3	158.5	158.5	159	SN01,SN03	167	151
Inertia	(kgm^2)	-	-	0.0325	0.0335	0.0335	0.0325	NO Option CAD	0.0342	0.0309

Actual Measurement Values **CAD Values** Proposal for Requirements

Points of Making Proposal

- Respect Actual Measurement Values.
- Option (type 1 and type 2) also can be attached (estimated by CAD values).

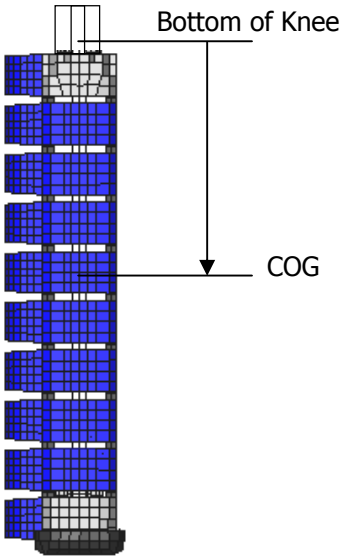
Flex-GTR (Mass, COG, Inertia) Tolerances

Available Information and Proposal for Requirements

Tibia

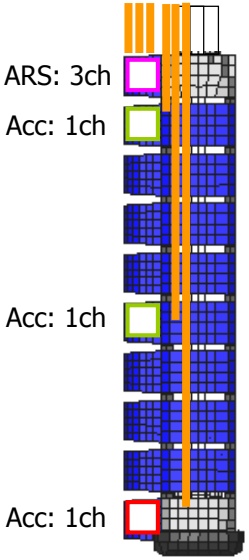
No Option

Basic



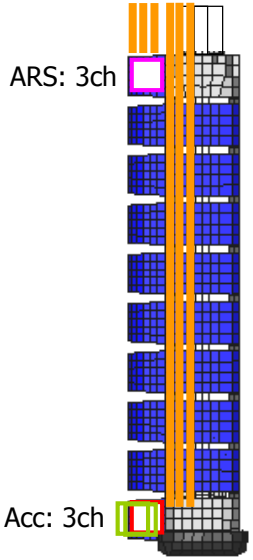
Option (Type 1)

Estimated Automaker Standard



Option (Type 2)

Estimated Worst Case of Acc Setting



Flex-GTR-proto, SN01

Flex-GTR-proto, SN03

CAD

CAD

CAD

CAD values: FTSS

Tibia		No Option SN01	No Option SN03	No Option CAD	Option (Type 1) CAD	Option (Type 2) CAD	BASE Values	Ref.	+/-5 % Upper Limit	+/-5 % Lower Limit
Mass	(kg)	2.610	2.660	2.651	2.682	2.690	2.64	AVERAGE	2.77	2.50
COG	(mm)	203.2	200.2	203.6	203.9	204.6	202	SN01,SN03	212	192
Inertia	(kgm^2)	-	-	0.0467	0.0474	0.0470	0.0467	NO Option CAD	0.0490	0.0443

Actual Measurement Values **CAD Values** Proposal for Requirements

Points of Making Proposal

- Respect Actual Measurement Values.
- Option (type 1 and type 2) also can be attached (estimated by CAD values).

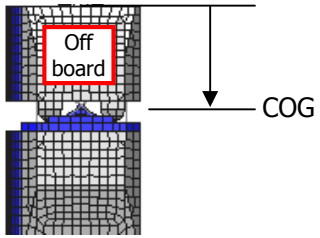
Flex-GTR (Mass, COG, Inertia) Tolerances

Available Information and Proposal for Requirements

Knee

Off board

Basic

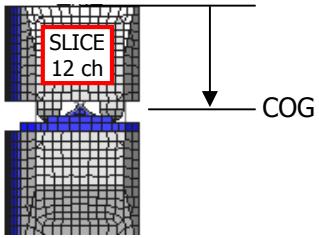


Flex-GTR-proto, SN01

CAD

SLICE 12ch

for Standard Measurements

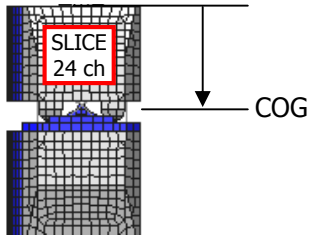


Flex-GTR-proto, SN03

CAD

SLICE 24ch

for Standard and Optional Measurements



CAD

CAD values: FTSS

SLICE and M=BUS have similar weight.
This study therefore considered SLICE only.

Knee		Off board SN01	Off board CAD	SLICE 12ch SN03	SLICE 12ch CAD	SLICE 24ch CAD	BASE Values	Ref.	+/-5 % Upper Limit	+/-5 % Lower Limit
Mass	(kg)	4.120	4.130	4.280	4.240	4.339	4.28	SLICE 12ch	4.49	4.07
COG	(mm)	92.3	92.8	92.2	93.4	92.4	92.2	SN03	96.8	87.6
Inertia	(kgm^2)	-	0.0172	-	0.0180	0.0182	0.0180	SLICE 12ch CAD	0.0189	0.0171

Actual Measurement Values

CAD Values

Proposal for Requirements

Points of Making Proposal

- Respect Actual Measurement Values.
- SLICE 12ch is selected as BASE (Reasons: <1> Off board type can attach "dummy weight" to simulate the SLICE weight, <2> Difference between SLICE 12 ch and 24 ch is small (within the requirements))