VERSION [0.0.3]

Modified: 2018/3/10

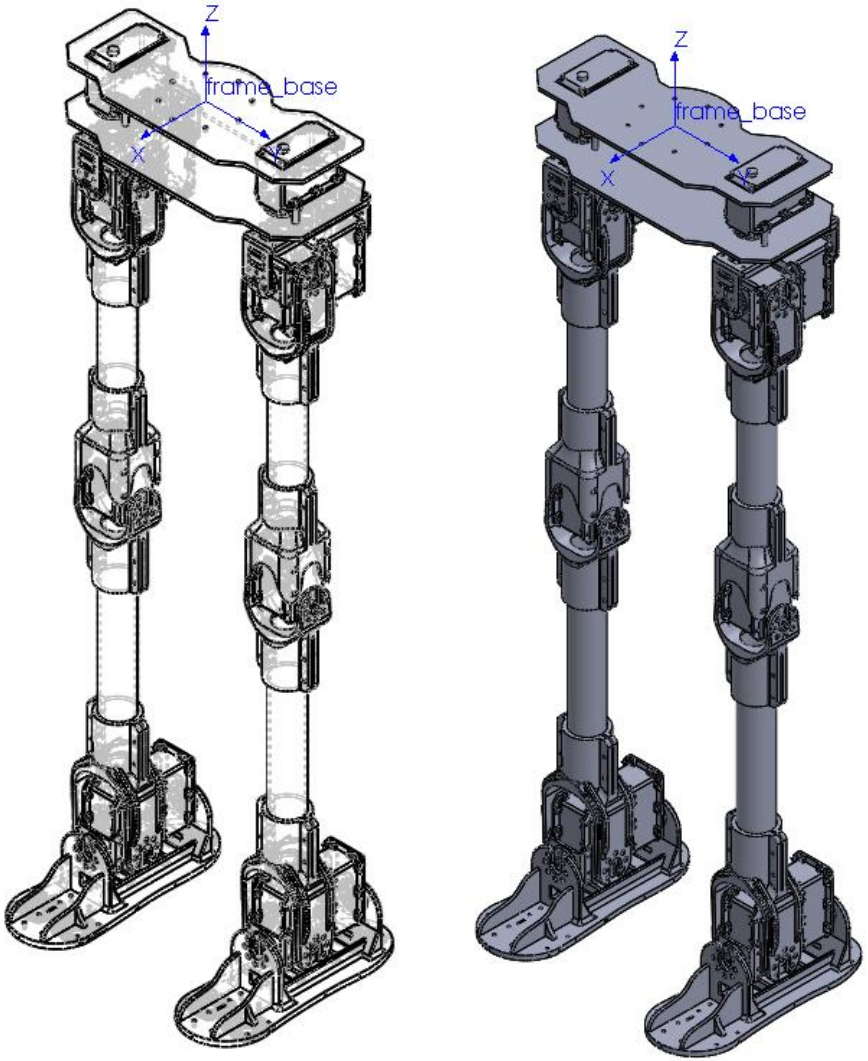
UTHAI-HUMANOID

DYNAMICS PROPERTIES

PRINCIPLE AUTHORS:

LIEWS

0. ALL ROBOT



URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
All Robot	frame_base	3.56700000	-0.00836813	0.00000000	-0.31830739

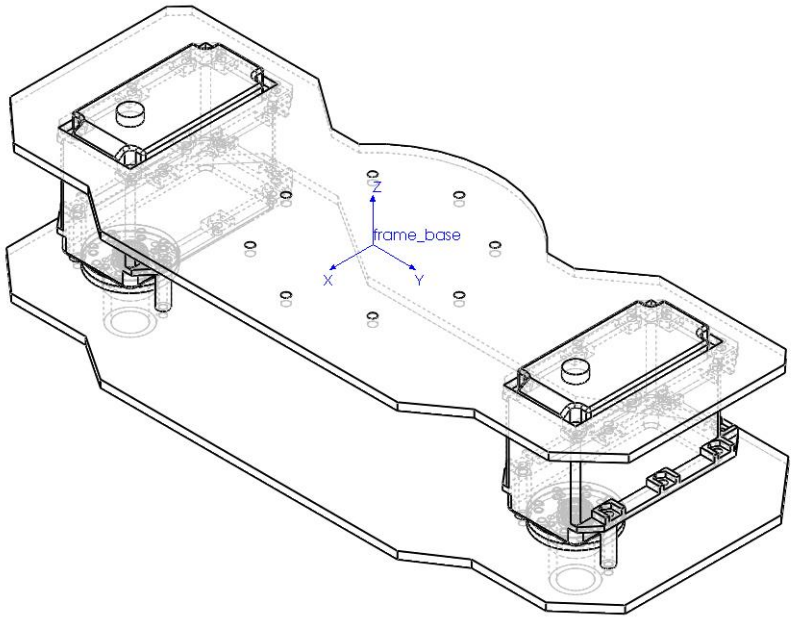
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
All Robot	0.31081793	-0.00000313	-0.00035731	0.28471758	-0.00000024	0.03125190

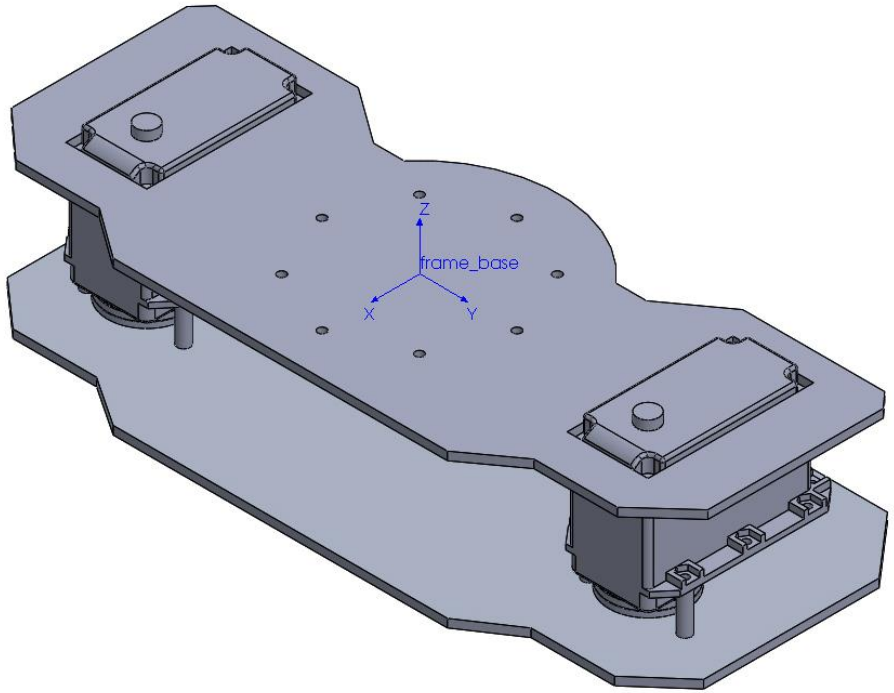
DH CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
All Robot	frame_base	3.56700000	-0.00836813	0.00000000	-0.31830739

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
All Robot	0.31081793	-0.00000313	-0.00035731	0.28471758	-0.00000024	0.03125190

1. PELVIS





URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
Pelvis	frame_base	0.86500000	-0.00557436	0.00000000	-0.02356598

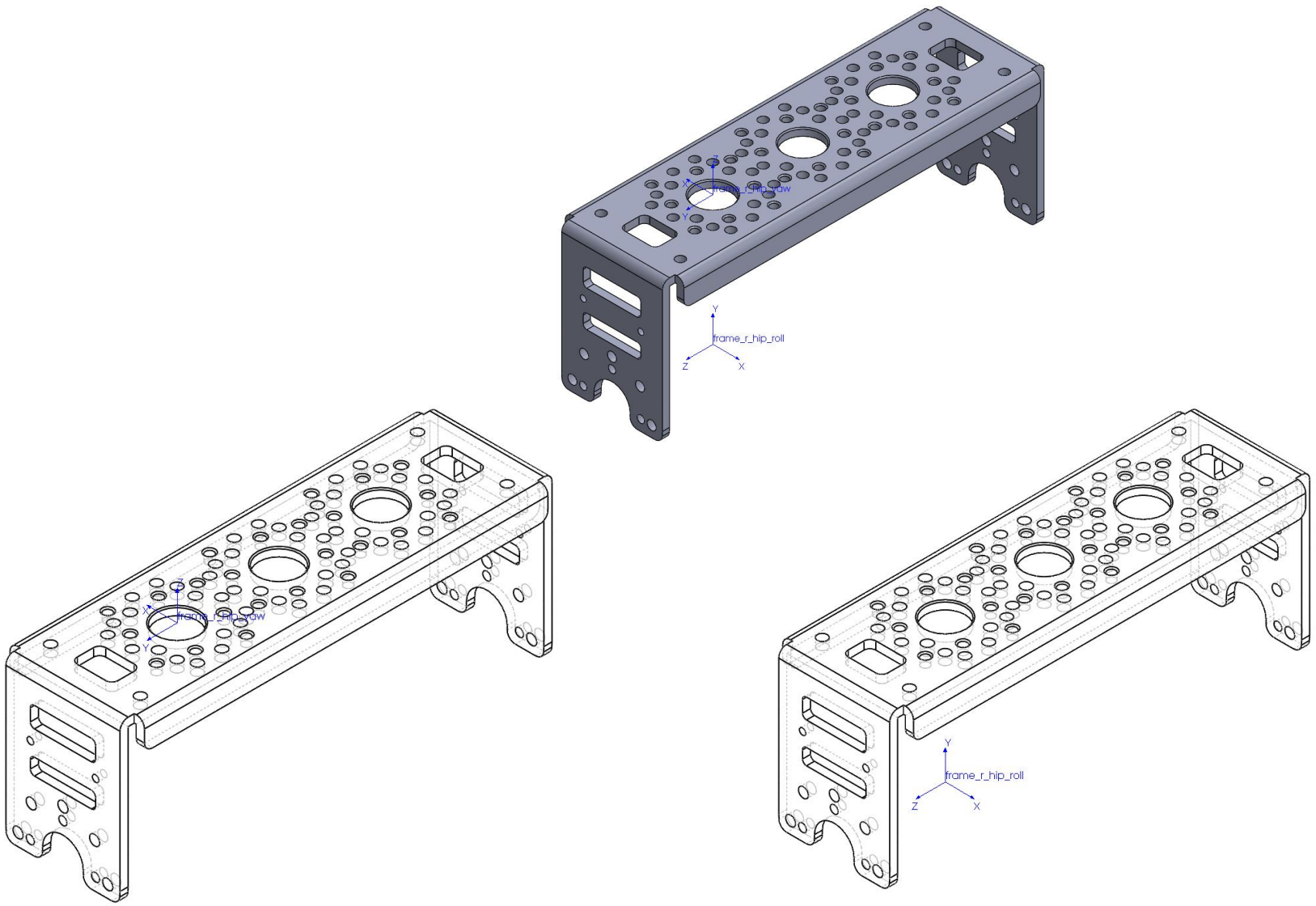
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
Pelvis	0.00656431	-0.00000003	-0.00000466	0.00067608	0.00000000	0.00664141

DH CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
Pelvis	frame_base	0.86500000	-0.00557436	0.00000000	-0.02356598

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
Pelvis	0.00656431	-0.00000003	-0.00000466	0.00067608	0.00000000	0.00664141

2. RIGHT LEG -> HIP YAW



URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Hip Yaw	frame_r_hip_yaw	0.09100000	0.00000000	-0.02500000	-0.00735017

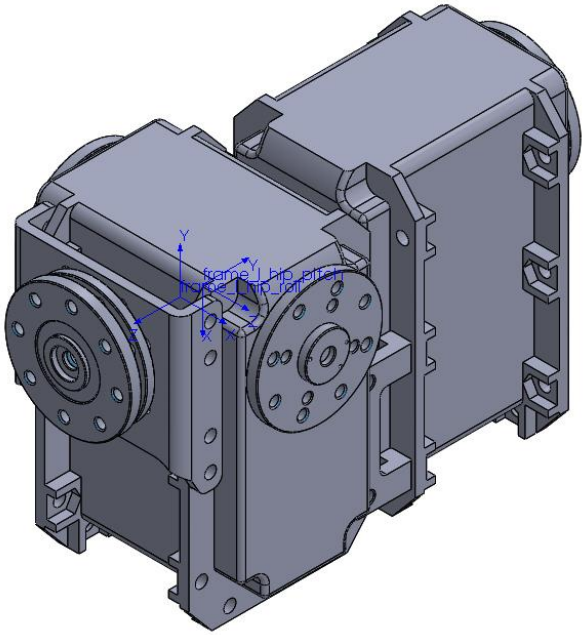
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Hip Yaw	0.00014158	0.00000000	0.00000000	0.00002022	0.00000000	0.00014316

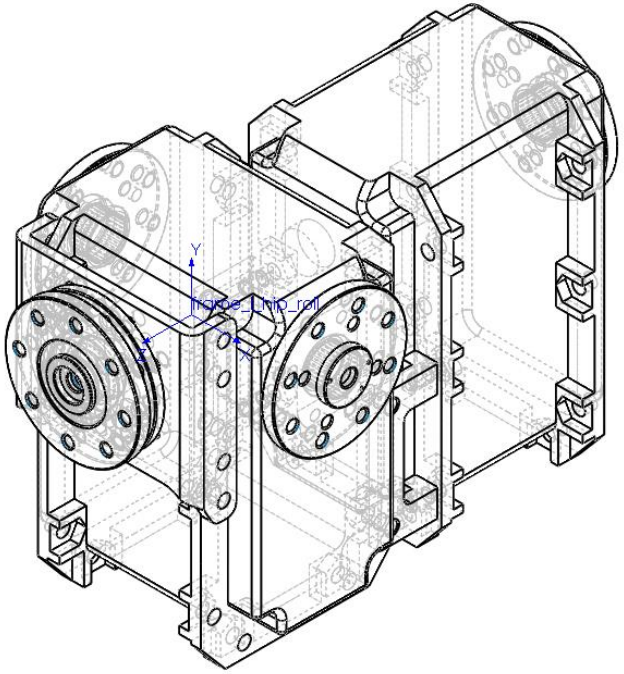
DH CONVENTION

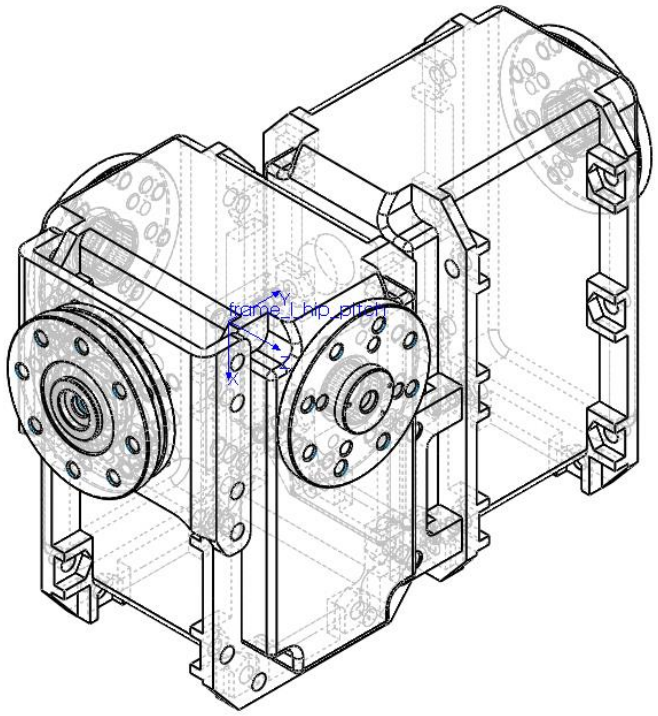
Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Hip Yaw	frame_r_hip_roll	0.09100000	0.00000000	0.02864983	-0.02500000

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Hip Yaw	0.00014158	0.00000000	0.00000000	0.00014316	0.00000000	0.00002022

3. RIGHT LEG -> HIP ROLL







URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Hip Roll	frame_r_hip_roll	0.34300000	0.00000000	-0.01526210	-0.02652545

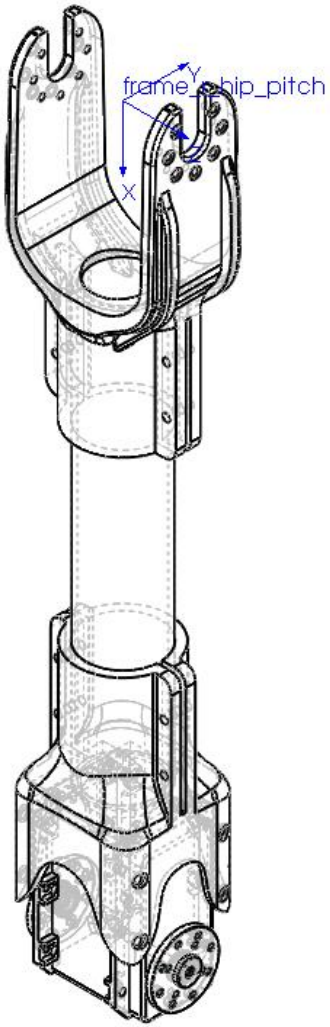
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Hip Roll	0.00032449	0.00000081	0.00000000	0.00026847	0.00000219	0.00014760

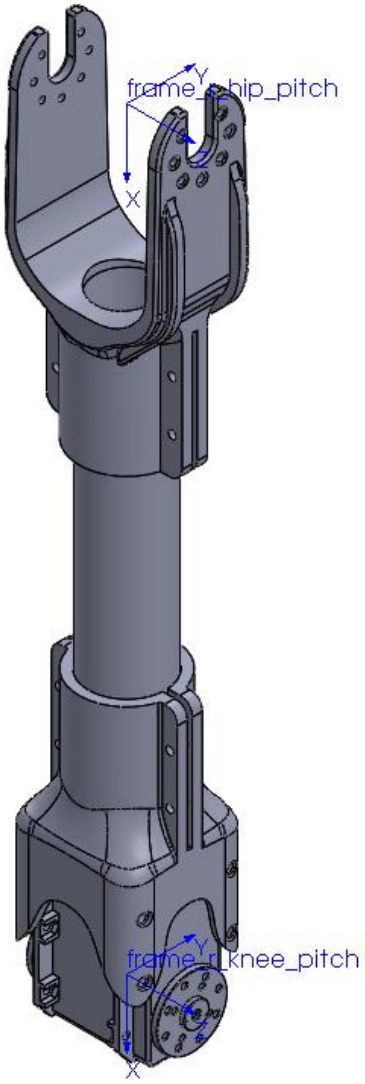
DH CONVENTION

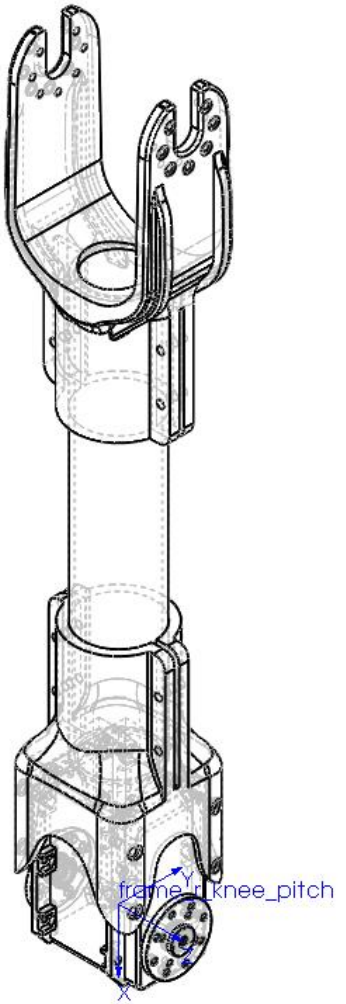
Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Hip Roll	frame_r_hip_pitch	0.34300000	0.01526210	0.02152545	0.00000000

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Hip Roll	0.00026847	0.00000219	-0.00000081	0.00014760	0.00000000	0.00032449

4. RIGHT LEG -> HIP PITCH







URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Hip Pitch	frame_r_hip_pitch	0.31800000	0.22137989	0.00000000	0.00000000

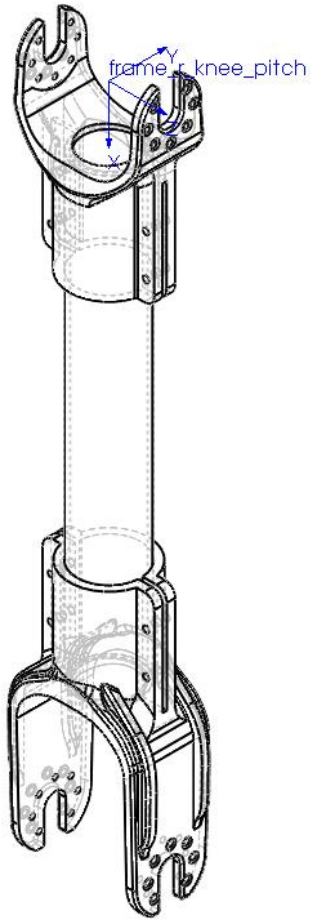
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Hip Pitch	0.00011525	0.00000000	0.00000078	0.00254669	0.00000000	0.00250848

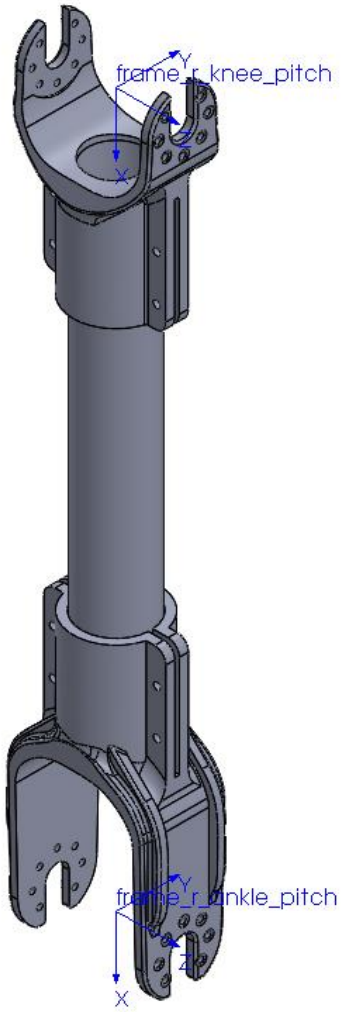
DH CONVENTION

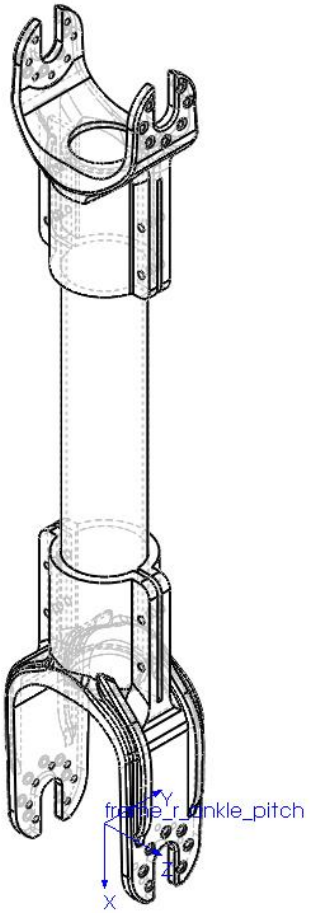
Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Hip Pitch	frame_r_knee_pitch	0.31800000	-0.07862011	0.00000000	0.00000000

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Hip Pitch	0.00011525	0.00000000	0.00000078	0.00254669	0.00000000	0.00250848

5. RIGHT LEG -> KNEE PITCH







URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Knee Pitch	frame_r_knee_pitch	0.15100000	0.16288218	0.00000000	0.00000000

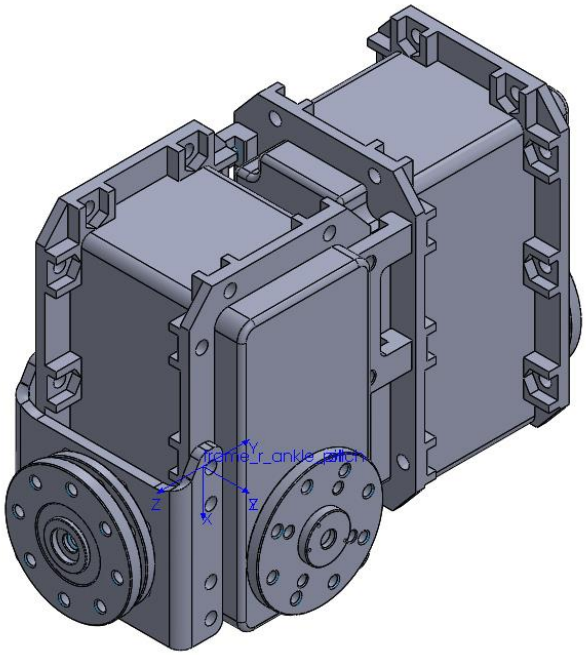
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Knee Pitch	0.00006340	0.00000000	0.00000000	0.00139612	0.00000000	0.00136731

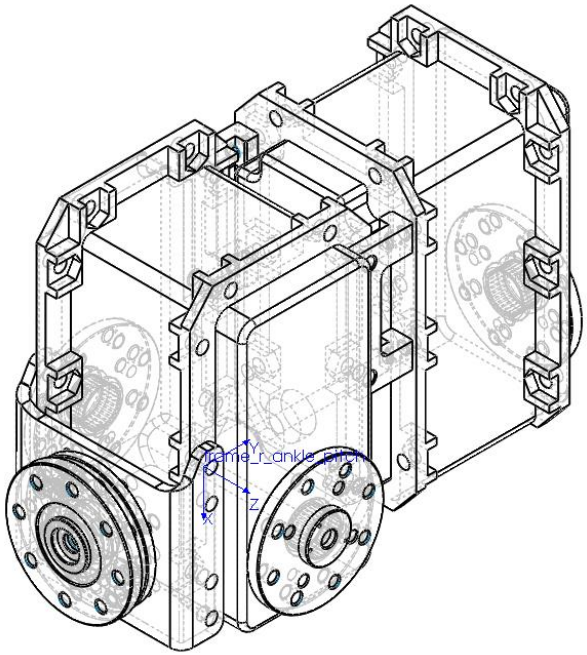
DH CONVENTION

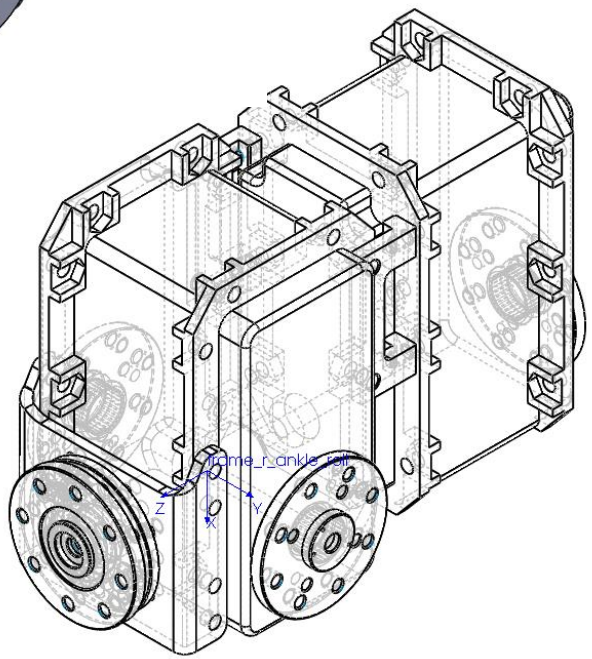
Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Knee Pitch	frame_r_ankle_pitch	0.15100000	-0.15211782	0.00000000	0.00000000

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Knee Pitch	0.00006340	0.00000000	0.00000000	0.00139612	0.00000000	0.00136731

6. RIGHT LEG -> ANKLE PITCH







URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Ankle Pitch	frame_r_ankle_pitch	0.34300000	-0.01526210	0.02152545	0.00000000

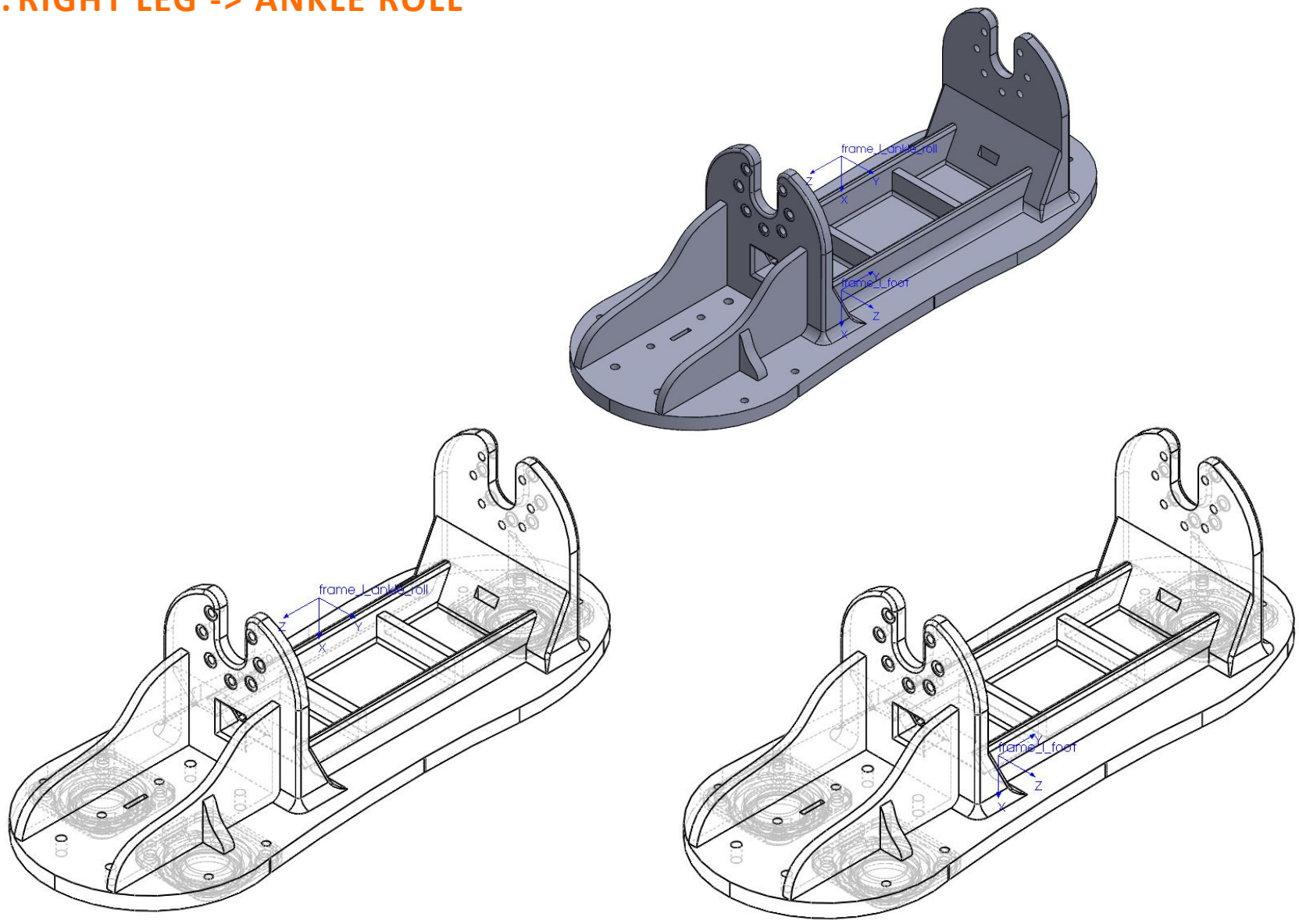
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Ankle Pitch	0.00026847	-0.00000219	-0.00000081	0.00014760	0.00000000	0.00032449

DH CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Ankle Pitch	frame_r_ankle_roll	0.34300000	-0.01526210	0.00000000	-0.02152545

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Ankle Pitch	0.00026847	-0.00000081	0.00000219	0.00032449	0.00000000	0.00014760

7. RIGHT LEG -> ANKLE ROLL



URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Ankle Roll	frame_r_ankle_roll	0.10500000	0.03625882	-0.00019548	0.00034576

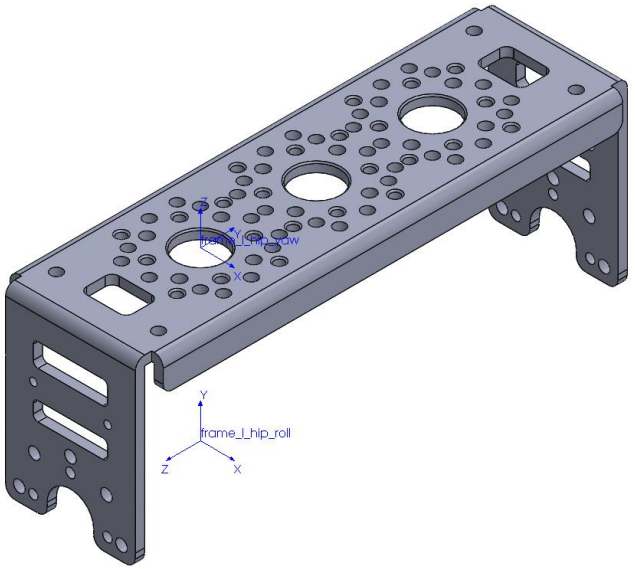
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Ankle Roll	0.00034591	-0.00000013	0.00000857	0.00032705	0.00000120	0.00004813

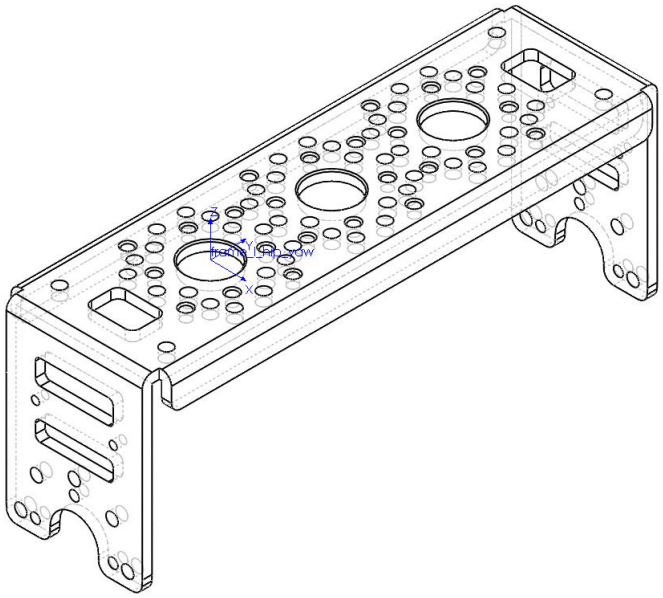
DH CONVENTION

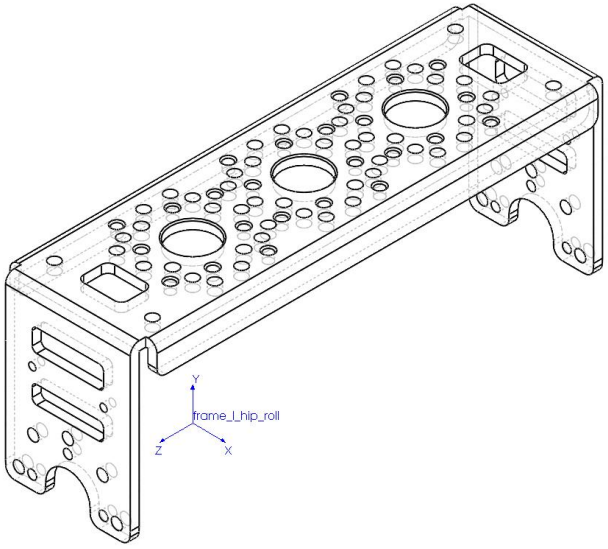
Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
R Ankle Roll	frame_r_foot	0.10500000	-0.01454118	-0.00034576	-0.00019548

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
R Ankle Roll	0.00034591	-0.00000857	-0.00000013	0.00004813	-0.00000120	0.00032705

8. LEFT LEG -> HIP YAW







URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Hip Yaw	frame_l_hip_yaw	0.09100000	0.00000000	0.02500000	-0.00735017

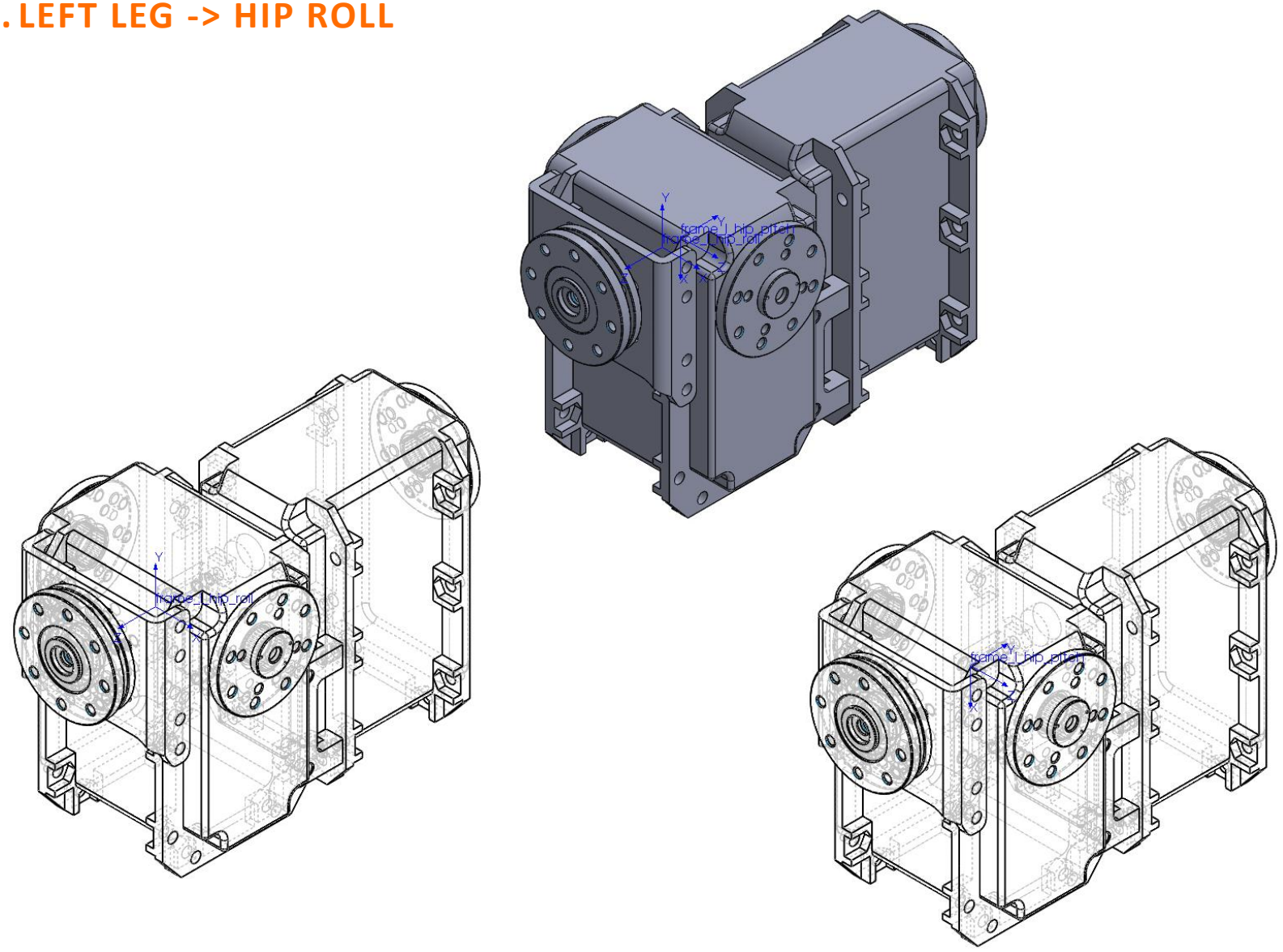
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Hip Yaw	0.00014158	0.00000000	0.00000000	0.00002022	0.00000000	0.00014316

DH CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Hip Yaw	frame_l_hip_roll	0.09100000	0.00000000	0.02864983	-0.02500000

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Hip Yaw	0.00014158	0.00000000	0.00000000	0.00014316	0.00000000	0.00002022

9. LEFT LEG -> HIP ROLL



URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Hip Roll	frame_l_hip_roll	0.34300000	0.00000000	-0.01526210	-0.02652545

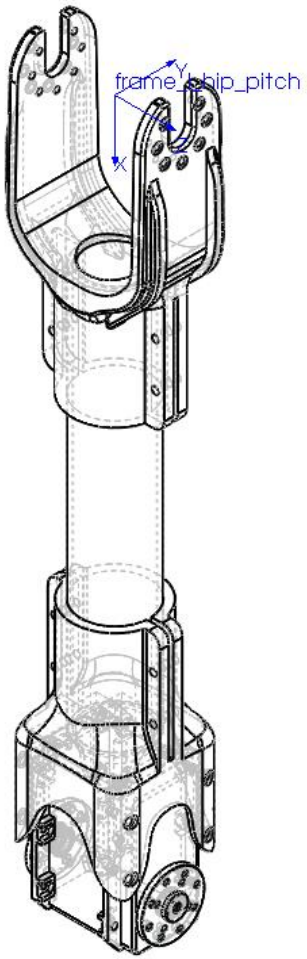
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Hip Roll	0.00032449	-0.00000081	0.00000000	0.00026847	0.00000219	0.00014760

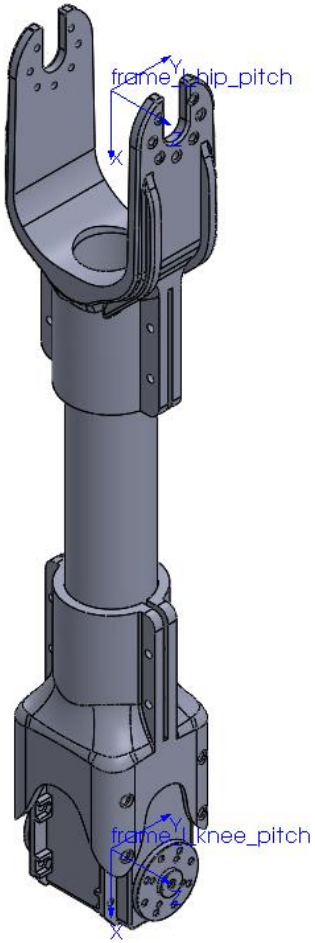
DH CONVENTION

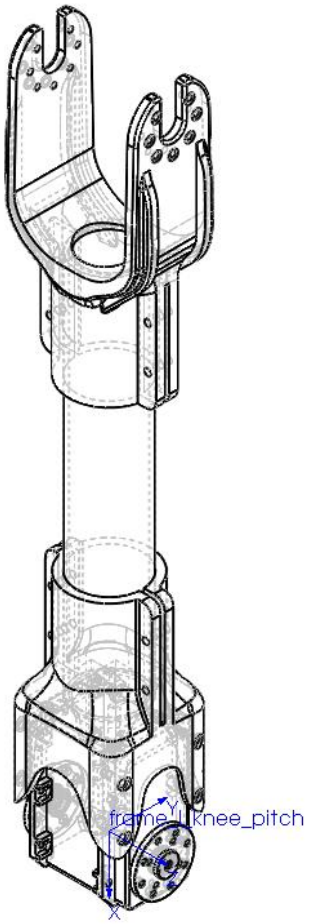
Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Hip Roll	frame_l_hip_pitch	0.34300000	0.01526210	0.02152545	0.00000000

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Hip Roll	0.00026847	0.00000219	0.00000081	0.00014760	0.00000000	0.00032449

10. LEFT LEG -> HIP PITCH







URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Hip Pitch	frame_l_hip_pitch	0.31800000	0.22137989	0.00000000	0.00000000

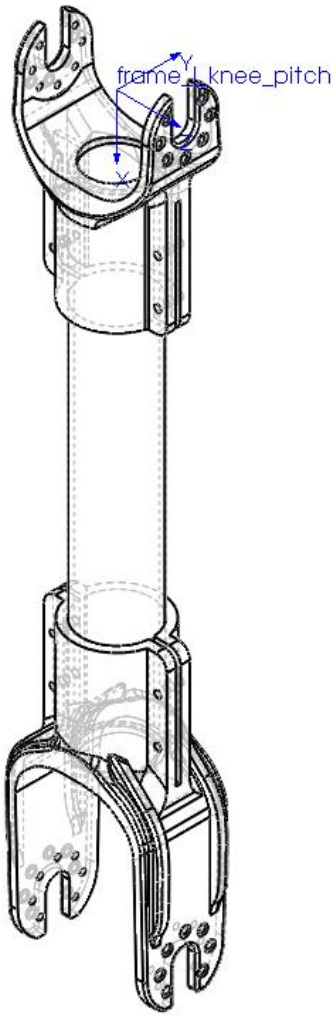
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Hip Pitch	0.00011525	0.00000000	0.00000078	0.00254669	0.00000000	0.00250848

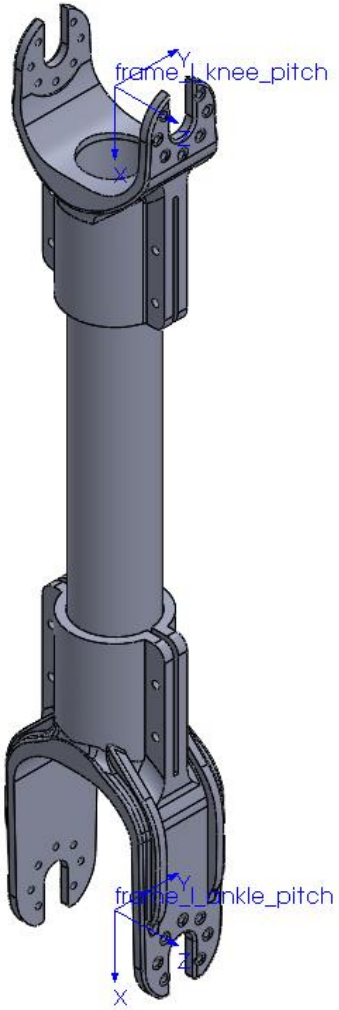
DH CONVENTION

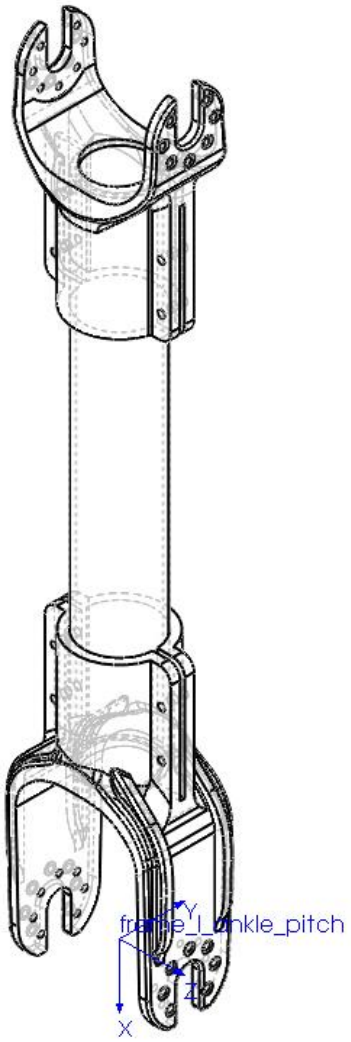
Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Hip Pitch	frame_l_knee_pitch	0.31800000	-0.07862011	0.00000000	0.00000000

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Hip Pitch	0.00011525	0.00000000	0.00000078	0.00254669	0.00000000	0.00250848

11. LEFT LEG -> KNEE PITCH







URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Knee Pitch	frame_l_knee_pitch	0.15100000	0.16288218	0.00000000	0.00000000

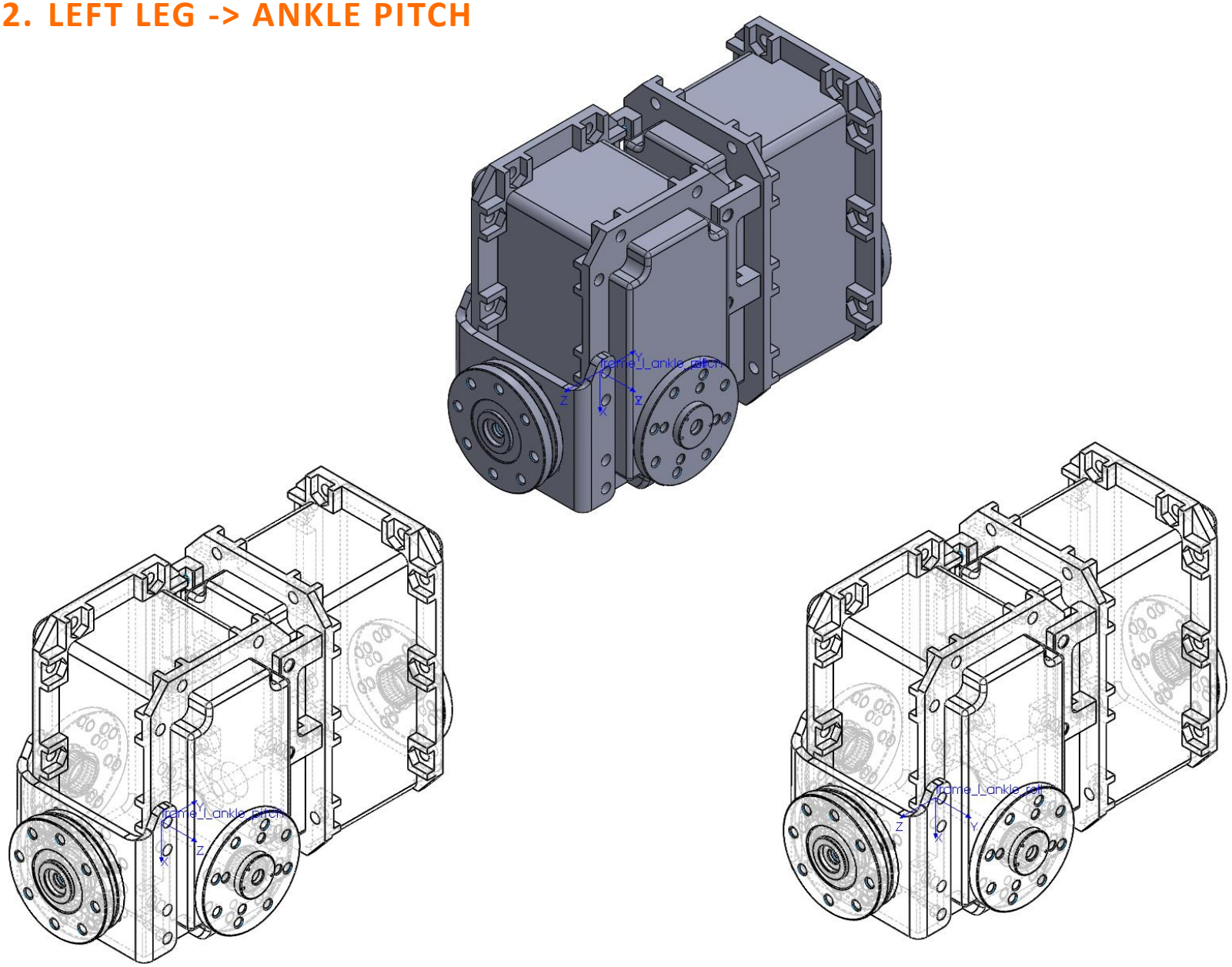
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Knee Pitch	0.00006340	0.00000000	0.00000000	0.00139612	0.00000000	0.00136731

DH CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Knee Pitch	frame_l_ankle_pitch	0.15100000	-0.15211782	0.00000000	0.00000000

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Knee Pitch	0.00006340	0.00000000	0.00000000	0.00139612	0.00000000	0.00136731

12. LEFT LEG -> ANKLE PITCH



URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Ankle Pitch	frame_l_ankle_pitch	0.34300000	-0.01526210	0.02152545	0.00000000

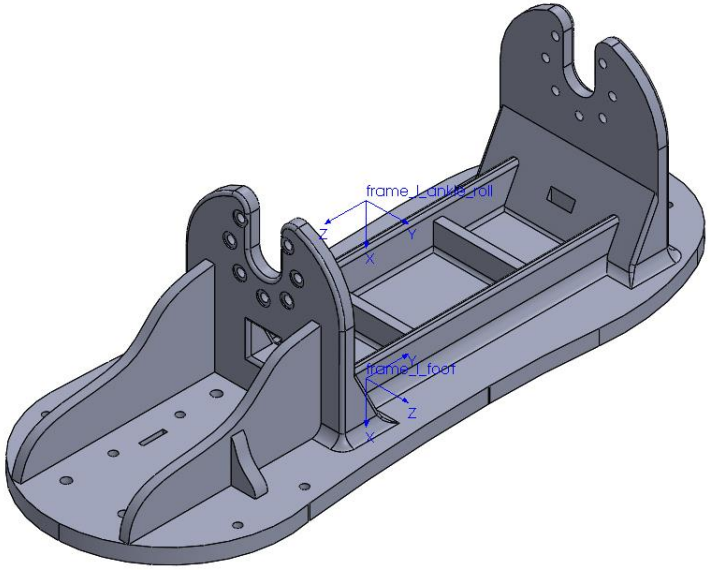
Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Ankle Pitch	0.00026847	-0.00000219	-0.00000081	0.00014760	0.00000000	0.00032449

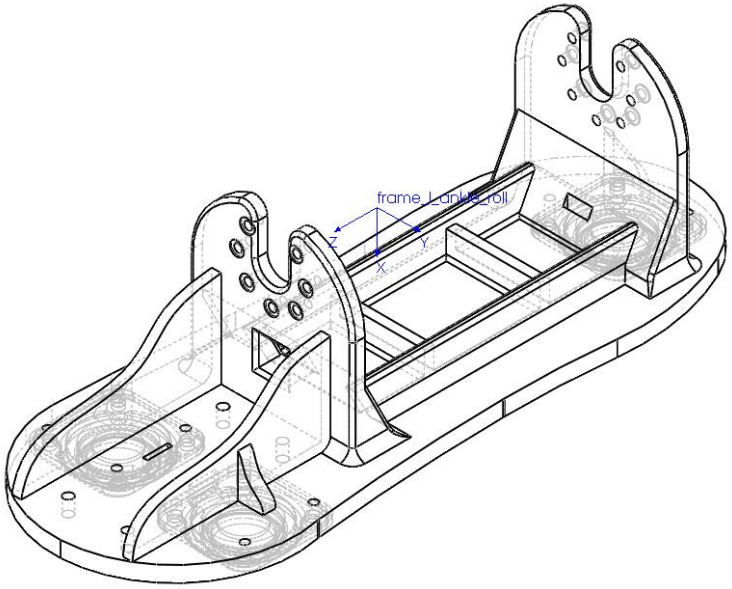
DH CONVENTION

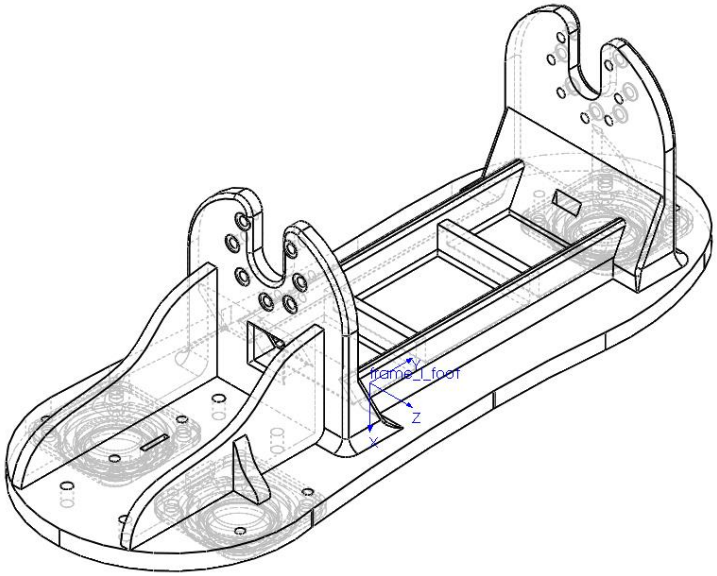
Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Ankle Pitch	frame_l_ankle_roll	0.34300000	-0.01526210	0.00000000	-0.02152545

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Ankle Pitch	0.00026847	-0.00000081	0.00000219	0.00032449	0.00000000	0.00014760

13. LEFT LEG -> ANKLE ROLL







URDF CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Ankle Roll	frame_l_ankle_roll	0.10500000	0.03608455	0.00020160	0.00002697

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Ankle Roll	0.00034223	0.00000014	0.00000840	0.00032348	-0.00000118	0.00004816

DH CONVENTION

Link	Frame	Mass [kg]	Center of mass [m]		
			X	Y	Z
L Ankle Roll	frame_l_foot	0.10500000	-0.01471545	-0.00002697	0.00020160

Link	Moments of Inertia [kg*m^2] (Taken at the center of mass)					
	Ixx	Ixy	Ixz	Iyy	Iyz	Izz
L Ankle Roll	0.00034223	-0.00000840	0.00000014	0.00004816	0.00000118	0.00032348


UTHAI
HUMANOID