## FBM 1: Object Perception

Team n	ame:						
Referee	I:		, Refere	ee II: _			
Date ar	nd time:						
Notes:							
• Sta	art and end	time are bas	ed on the referee	stop w	ratch.		
	neout is che ration.	ecked when	the robot canno	detect	t the object within the specified test		
• GT	is the grou	nd truth wh	ich is the inform	ation p	rovided by the referee box.		
• Ob	ject identifie	er:					
-	– EM-01(1):	=aid trav E	M-02(2)=cover p	late bo	NY.		
	` '		_		custom bearing box		
	` /			` /			
-	– AX-02(6)=	=bearing, A.	X-09(7) = motor,	AX-03(	5)=axis		
Run 18	Start Time	F	End Time:		Timeout		
Object I		<del></del>			2		
		ainer	Bearing Bo	77.	Transmission		
GT	EM-01(1)		,	$\frac{000}{-16(3)}$	AX-02(6)   AX-09(7)   AX-03(5)		
	Container		Bearing be	. ,	Transmission		
Robot	EM-01(1) EM-02(2)		AX-01(4)   AX-16(3)		AX-02(6)   AX-09(7)   AX-03(5)		
Pose	. ,		V / I				
	X	y z		x	y z		
GT		J 2	—— Robot				
Commen	its:		П	"			
Run 2 S	Start Time:	. F	and Time:	. $\square$	Timeout		
	Detection						
C/F	Cont	ainer	Bearing Bo	OX	Transmission		
GT	EM-01(1)	EM-02(2)	AX-01(4) AX	-16(3)	AX-02(6)   AX-09(7)   AX-03(5)		
Robot	Cont	ainer	Bearing box		Transmission		
10000	EM-01(1) EM-02(2)		AX-01(4)   AX-16(3)		AX-02(6)   AX-09(7)   AX-03(5)		
Pose							
GT	X	y z	Robot	X	y z		
Commen	its:						

Robot         Container EM-01(1)         Bearing box EM-01(4)         Transmission AX-02(6)         AX-09(7)         AX           Pose         GT         X         y         z         Robot         X         y         z           Comments:         GT         X         y         z         Robot         Transmission           Comments:         GT         Container EM-01(1)         EM-02(2)         AX-01(4)         AX-16(3)         AX-02(6)         AX-09(7)         AX           Robot         EM-01(1)         EM-02(2)         AX-01(4)         AX-16(3)         AX-02(6)         AX-09(7)         AX           Pose         GT         X         y         z         Robot         X         y         z           Comments:         GT         X         y         z         Robot         X         y         z           Comments:         GT         X         y         z         Robot         X         y         z           Comments:         GT         X         y         z         Robot         X         y         z           Comments:         GT         Container         Bearing Box         Transmission           GT <t< th=""><th> &gt; N</th><th>otart .</th><th>L'ime: _</th><th></th><th>_, Er</th><th>nd Time: _</th><th></th><th>, <math>\square</math></th><th>Timeout</th><th></th><th></th><th></th></t<>	> N	otart .	L'ime: _		_, Er	nd Time: _		, $\square$	Timeout			
GT         EM-01(1)         EM-02(2)         AX-01(4)         AX-16(3)         AX-02(6)         AX-09(7)         AX           Robot         Container         Bearing box         Transmission           Pose         EM-01(1)         EM-02(2)         AX-01(4)         AX-16(3)         AX-02(6)         AX-09(7)         AX           Pose         GT         X         Y         Z         Robot         X         Y         Z           Comments:         GT         X         Y         Z         Robot         Transmission           GT         Container         Bearing Box         Transmission           GT         EM-01(1)         EM-02(2)         AX-01(4)         AX-16(3)         AX-02(6)         AX-09(7)         AX           Robot         EM-01(1)         EM-02(2)         AX-01(4)         AX-16(3)         AX-02(6)         AX-09(7)         AX           Pose         GT         X         Y         Z         Robot         X         Y         Z           Comments:	ject Γ	Detect	ion									
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	T	III		(2)	$\overline{\circ}$							
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	obot		Cont	ainer		Bearin	ıg box			Transn	nission	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		EM-	01(1)	EM-02	(2)	AX-01(4)	AX-1	6(3)	AX-02(6	)   AX-0	9(7)	AX-03(5)
G1         Robot         Robot           Comments:           GR	se	- II				II		II			п	
Run 4 Start Time:	Т		X	У	Z	Robot		X	У	Z		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	mmen	its:										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	ın 4 S	Start <sup>-</sup>	Fime:		Er	nd Time		П	Timeout			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$					_,	ia 111116			1 micour			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	T	EM-			(2)				AX-02(6			AX-03(5)
GT $\begin{array}{ c c c c c c c c c c c c c c c c c c c$	obot	EM-			(2)				AX-02(6			AX-03(5)
Comments:	se											
Run 5 Start Time:	Т		X	У	Z	Robot	J	X	У	Z		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	mmen	ıts:										
Object DetectionGTContainerBearing BoxTransmissionEM-01(1)EM-02(2)AX-01(4)AX-16(3)AX-02(6)AX-09(7)AXRobotContainerBearing boxTransmission		7, , , ,	D:			1 (T):			<b>.</b>			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$					_, Er	nd Time: _		, ⊔	Timeout			
GT         EM-01(1)         EM-02(2)         AX-01(4)         AX-16(3)         AX-02(6)         AX-09(7)         AX           Robot         Container         Bearing box         Transmission           EM-01(1)         EM-02(2)         AX-01(4)         AX-16(3)         AX-02(6)         AX-09(7)         AX	U .			Regring Roy				Transn	niesion			
Robot EM-01(1) EM-02(2) AX-01(4) AX-16(3) AX-02(6) AX-09(7) AX	Т	EM-			(2)				AX-02(6			AX-03(5)
$\parallel \text{EM-01(1)} \parallel \text{EM-02(2)} \parallel \text{AX-01(4)} \parallel \text{AX-16(3)} \parallel \text{AX-02(6)} \parallel \text{AX-09(7)} \parallel \text{AX}$	obot								\			
Pose		EM-	01(1)	EM-02	(2)	AX-01(4)	AX-1	6(3)	AX-02(6	)   AX-0	9(7)	AX-03(5)
	se							П			n	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Τ		X	У	Z	Robot	-	X	У	Z		
Comments:									•		_	

	start	Time: _		_, E	nd Time:		Timeout		
Object I	Detect	ion							
GT	Container EM-01(1)   EM-02(2)		2)	Bearing Box AX-01(4)   AX-1		Transmission   AX-02(6)   AX-09(7)   AX-03(5)			
	$\begin{array}{ c c c c c c }\hline EM-01(1) & EM-02(2) \\\hline \hline & Container \\\hline \end{array}$			<u>-                                    </u>	Bearing box	( /	$\frac{  \Pi X - \partial Z(0)   \Pi X - \partial S(1)   \Pi X - \partial S(3) }{  \text{Transmission}  }$		
Robot	EM		EM-02(	2)	AX-01(4) AX-1		AX-02(6)   AX-09(7)   AX-03(5)		
Pose	ı	( )			( )	( )			
GT		X	У	Z	Robot		y z		
Commen	its: _								
Run 7 S	Start '	Time: $_{-}$		_, E	nd Time:		Timeout		
Object I	Detect	ion							
GT	EM	Conta	ainer EM-02(	2)	Bearing Box AX-01(4)   AX-1		Transmission   AX-02(6)   AX-09(7)   AX-03(5)		
Robot		Conta		,	Bearing box AX-01(4)   AX-1		Transmission   AX-02(6)   AX-09(7)   AX-03(5)		
Pose	1	0-(-)		<u>-</u> /		(0)			
GT		X	У	Z	Robot	X	y z		
Commen	ıts: _								
Run 8 S	Start '	Time: _		_, E	nd Time:	, □	Timeout		
Object I	Detect	ion							
	Container				Bearing Box		Transmission		
$\alpha$	EM-01(1) EM-02(2)			2)	AX-01(4) AX-1		AX-02(6)   AX-09(7)   AX-03(5)		
GT	EM:	01(1)		D : 1		m · ·			
	EM	Conta	ainer		Bearing box		Transmission		
GT Robot		( /	ainer EM-02(	2)	AX-01(4) AX-1		II.		
		Conta		2)					
Robot		Conta		2) z					
Robot Pose	EM	Conta -01(1)	EM-02(		AX-01(4)   AX-1	16(3)	AX-02(6)   AX-09(7)   AX-03(5)		

Run 9 S	Start Time: .	, E	and Time: _		Timeout			
Object I	Detection							
GT	Container EM-01(1)   EM-02(2		Bearing Box AX-01(4)   AX-16(3)		Transmission AX-02(6)   AX-09(7)   AX-03(5)			
Robot	Container EM-01(1) EM-02(2)		Bearing box AX-01(4)   AX-16(3)			Transmission AX-02(6)   AX-09(7)   AX-03(5)		
Pose								
GT	X	y z	Robot	X	У	Z		
Commen	nts:							
	Start Time:	,	End Time:	, [	☐ Timeout			
		ainer	Roarin	ng Box		Transmission	0	
GT	EM-01(1)		AX-01(4)	~		AX-09(7)	AX-03(5)	
Robot	Container Bearing box Transmission			AX-03(5)				
Pose								
GT	X	y z	Robot	X	У	Z		
Comments:								
	narking dat eader signa				,			
Referee	signature:							
TOTOLOG	218marane.							

## FBM 2: Visual Servoing

Team name:	
Referee I:	, Referee II:
Date and time:	
Notes:	
• The start and the end time for each	run are based on the referee stop watch.
• Timeout is checked when the robo duration.	ot cannot grasp the object within the specified test
• The sequence of objects which are u	used in each run is defined by the team.
•	EM-02=cardbox black, AX-01=standard bearing box, 02=bearing, AX-03=axis, AX-09=motor
·	, $\square$ Timeout Orientation:, $\square$ Success, $\square$ Dropped
·	, $\square$ Timeout Orientation:, $\square$ Success, $\square$ Dropped
Run 3 Start time:, End time: Object id:, Comments:	Orientation:, $\Box$ Success, $\Box$ Dropped
Run 4 Start time:, End time: Object id:, Comments:	Orientation:, $\Box$ Success, $\Box$ Dropped
Run 5 Start time:	Orientation:, $\Box$ Success, $\Box$ Dropped

Run 6 Start time:, End	time:, $\Box$ Timeout	
Object id:	, Orientation:,	$\square$ Success, $\square$ Dropped
Comments:		
Run 7 Start time:, End	time:, $\square$ Timeout	
Object id:	, Orientation:,	$\square$ Success, $\square$ Dropped
Comments:		
Benchmarking data delivered	appropriately: $\square$ yes $/$ $\square$ no	
Team leader signature:		
Referee signature:		