Team name:	REBUT	
Referee I (Land):	FRANK	Referee II (Land): MICHAEL
Referee I (Air):	FRAN	, Referee II (Air):
Date (DD/MM/YY	YY): 219/17	, Time (24:00): 09 100
Duration: 3	7 Min (Max. 4:	5 min) Timeout

Achievements

An aerial robot reaches the waypoints (WPs) within a radius of 5 m in autonomous navigation. Waypoints can be reached in no specific order and the team can suggest additional waypoints to their flight plan	WP1 A	WP2 A	A1.3 WP3 A
A ground robot reaches the waypoints within a precision of 3m.	A1.4 WP1 L	A1.5 WP2 L	
A ground robot reaches the WPs within a precision of 3 m in autonomous navigation.	A1.6 WP3 L	A1.7 WP4 L	

Within 30 minutes of start of the run, a robot reports the correct location (within radius 5 m)	A1.8
of the missing worker outside the building.	IN/
	Ų.
An aerial robot deploys the first-aid kit (within radius 2 m) from the worker outside the building.	A1.9
3	
The aerial robot transfers the first-aid kit to the land robot outside the building.	A1.10
	1

ŧ.	Outdoor damages (building)					
The robots recognise the damages on the wall of	A1,11 D1 🗆	A1.12	2 D2 □ A		1.13 D3 □	
the building.		l l	Domain		Robot Domain:	
(Each damage can only be scored once).	Robot Domain:	Robot	Domain	i: Kobo	tobot Domain:	
(Euch damage can only be beored once).		=	-	1.3		
19	'					
A robot localises the unobstructed entrance in real	l-time in automatic	way.	+	I	A1.14 🗆	
Robots localise the obstructed entrances .	A1.15 E1	П	Δ	1.16 E2 [7	
Robots localise the obstructed entrances.						
42	Robot Do	main:	- R	obot Don	nain:	
Debete ford a seferal make the most	alala ala da antona a Cal	a a lavildina	£			
Robots find a safe and unobstructed path to the ur robot. (The path is shown on the map).	iblocked entry of the	ne building	for a gre	ouna	A1.17 🗖	
Tools. (The pain is shown on the map).				ľ		
From the starting point, a ground robot follows a sat	fe path (collision fr	ee from obs	stacles a	nd		
structures) to the unobstructed building entrance.					A1.18 🗖	
Debate build an author was of the land since are with ODE (Marth West side)						
Robots build an outdoor map of the land pipes area with OPIs (North-West side).					A1.19 🗖	
Robots build an outdoor map of the land pipes area with OPIs (North-East side).					A1.20 □	
					A1.20 L	
Robots build an outdoor map of the land pipes area with OPIs (South-West side).					A1.21 🗆	
Robots build an outdoor map of the land pipes area with OPIs (South-East side).						
Robots build all butdoor map of the fand pipes area with of is (South-Last side).					A1.22 🗖	
Set A2: Indoors						
A ground robot enters the building through the unc	hetructed door					
Trigitalia robot enters the banding allough the allous action deleters the banding allough the allous action deleters.					A2.1 □	
Within 30 minutes of start of the run, a ground robot reports the correct location of the missing			nissing			
worker inside the building.					A2.2 🗖	
The missing worker is detected in real-time in an automatic way.						
The missing worker is detected in real-time in an automatic way.				A2.3 □		
A ground robot deploys the first-aid kit (within radius 1 m) from the worker inside the building.		uilding.	A2.4 □			
			т	ndoes de	am a gas	
	11 0.1 1 1 1 1			ndoor da		
The ground robot(s) recognise the damages on the	wall of the building	ıg.	D1 🗖		D2 🗆	
(Each damage can only be scored once).			A2.5		A2.6	

A			
A ground robot finds a safe and unobstructed path to the machine room from the building entrance. (The path is shown on the map).			
From the building entrance, a grand structures) to the machine re	round robot follows a safe path (collision free fro	m obstacles	A2.8 🗆
A ground robot recognises the	machine room sign in real-time and in automatic	way.	A2.9 🗆
A ground robot enters the mac	hine room,		A2.10 □
U		Indoor	map
The ground robot(s) builds a g	eometric indoor map of the building.	Area 1 🗆	Area 2 🗆
(Use the best map or a combina	tion of ground robots maps).	A2.11	A2.12
Set A3: Cooperation	<u> </u>		
The aerial robot communicates	to the ground robot the safe path to the building	•	A3.1□
Set A4: General			
The aerial robots return to the l	anding area once all the tasks have been done.		A4.1
The aerial robots return to the l	anding area once all the tasks have been done.		A4.2□
The ground robots return to the	e landing area once all the tasks have been done.		A4.3□
The ground robot(s) transmits	live position and images/video to the control station	on during the run	· A4.4□
The aerial robot(s) transmits liv	ve position and images/video to the control station	during the run.	A4.5🗹
Penalised Behavio	urs		
The robot needs manual interven	ntion during a run (e.g. the robot is stuck):		
Aerial robot	PB1 □ (max. 1)		
Ground robot 1	PB2 🗹 🗹 (max. 2)		
Ground robot 2	PB3 □ □ (max. 2)		

The ground robot leaves the operating area.	PB4 □ (max. 1)
The ground robot changes batteries or is refuelled.	PB5 □ (max. 1)
The ground robot-1 hits the obstacles.	PB6 🗆 🗆 🗆
The ground robot-2 hits the obstacles.	PB6 🗆 🗆 🗆
The aerial robot does not keep the safety distance of 5 m with the building wall.	PB7 □ □ (max. 2)
Disqualifying Behaviours	
A robot damages competition arena (including the obstacles).	DB1 □
A robot does not conform to safety requirements for the competition.	DB2 □
A robot impacts the sensitive dune area.	DB3 □
A robot enters any of the upper floors of the building.	DB4 🗖
The aerial robot leaves the flight volumes defined by the organisation.	DB5 🗆
The aerial robot impacts the building.	DB6 □
The aerial robot enters the building.	DB7 □
Comment:	only when it is
Benchmarking data delivered appropriately: □ yes / □ no	
(Time is 60 min after the end of the team's time-slot, formats as described in the TBM)	
Team leader signature:	
Referee signature:	

Team name: ENJTA BRETA	tant
Referee I (Land): HAND ARTHUR	Referee II (Land):
Referee I (Air): FRAN	, Referee II (Air):
Date (DD/MM/YYYY): 20 9 17	, Time (24:00):
Duration:(Max. 45 min	n) □ Timeout

Achievements

An aerial robot reaches the waypoints (WPs) within a radius of 5 m in autonomous navigation. Waypoints can be reached in no specific order and the team can suggest additional waypoints to their flight plan	WP1 A	MP2 A	A1.3 WP3 A
A ground robot reaches the waypoints within a precision of 3m.	A1.4 WP1 L	A1.5 WP2 L	
A ground robot reaches the WPs within a precision of 3 m in autonomous navigation.	A1.6 WP3 L	A1.7 WP4 L	

Within 30 minutes of start of the run, a robot reports the correct location (within radius 5 m)	A1.8
of the missing worker outside the building.	444
An aerial robot deploys the first-aid kit (within radius 2 m) from the worker outside the building.	A1.9
The aerial robot transfers the first-aid kit to the land robot outside the building.	A1.10
(It must be directly deployed on the platform or within a radius of I m from it)	A1.10
(It must be directly deployed on the plaiform of within a radius of 1 m from it)	

ŧ	Outdoor damages (building)						
The robots recognise the damages on the wall of	A	A1.11 D1		D2 🗆 💮 A 1		A1.13 D3 🗆	
the building.	Robo	ot Domain:	Robot I	Robot Domain:		Robot Domain:	
(Each damage can only be scored once).	-	_	 				
A robot localises the unobstructed entrance in real-time in automatic way.					A1.14 🗆		
Robots localise the obstructed entrances.		A1.15 E1	/	A 1	.16 E2		
Robots localise the obstructed entrances.		Robot Doma	in: LAN			main:	
Robots find a safe and unobstructed path to the unrobot. (The path is shown on the map).	nblocke	d entry of the	building f	or a gro	und	A1.17 🗖	
From the starting point, a ground robot follows a safe path (collision free from obstacles and structures) to the unobstructed building entrance.				A1.18 🗹			
Robots build an outdoor map of the land pipes area with OPIs (North-West side).				A1.19 🗆			
Robots build an outdoor map of the land pipes area with OPIs (North-East side).				A1.20 🗆			
Robots build an outdoor map of the land pipes area with OPIs (South-West side).				A1.21 🗆			
Robots build an outdoor map of the land pipes area with OPIs (South-East side).			A1.22 □				
Set A2: Indoors							
A ground robot enters the building through the unobstructed door.					A2.1		
Within 30 minutes of start of the run, a ground robot reports the correct location of the missing worker inside the building.			A2.2 🗆				
The missing worker is detected in real-time in an automatic way.				A2.3 □			
A ground robot deploys the first-aid kit (within rac	lius 1 m) from the wo	rker insid	e the bu	ilding.	A2.4 □	
				In	door d	amages	
The ground robot(s) recognise the damages on the	wall of	the building.		D1 🗆		D2 🗆	
(Each damage can only be scored once).				A2.5		A2.6	

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5 B

A ground robot finds a safe ar entrance. (The path is shown or	d unobstructed path to the machine room from the nap).	building	A	√2.7 □
•	round robot follows a safe path (collision free fro	m obstacles		• • •
and structures) to the machine r	room.		A	12.8 □
A ground robot recognises the	machine room sign in real-time and in automatic	way.	Д	√2.9 □
A ground robot enters the made	chine room.	1		
			A	2.10 🔽
		Indoor	mai	D
The ground robot(s) builds a s	geometric indoor map of the building.	Area 1		a 2 🗆
(Use the best map or a combine	ition oj grouna robots maps).	A2.11	A2.	.12
Set A3: Cooperation	18			
The aerial robot communicates	s to the ground robot the safe path to the building	•		A3.1□
Set A4: General				
The aerial robots return to the	landing area once all the tasks have been done.	11		A4.1
The aerial robots return to the	landing area once all the tasks have been done.		=	1105
				A4.2□
The ground robots return to th	e landing area once all the tasks have been done.			A4.3□
The ground robot(s) transmits	live position and images/video to the control station	on during the run	١.	A4.4
The aerial robot(s) transmits li	ve position and images/video to the control station	during the run.		A4.5□
Penalised Behavio				
The robot needs manual interve	ention during a run (e.g. the robot is stuck):	<u> </u>		6
Aerial robot	PB1 □ (max. 1)			
Ground robot 1	PB2 ☑ (max. 2)	£2		

PB3 □ □ (max. 2)

Ground robot 2

The ground robot leaves the operating area.	PB4 □ (max. 1)
The ground robot changes batteries or is refuelled.	PB5 □ (max. 1)
The ground robot-1 hits the obstacles.	PB6 □ □ □ □
The ground robot-2 hits the obstacles.	PB6 □ □ □ □
The aerial robot does not keep the safety distance of 5 m with the building wall.	PB7 □ □ (max. 2
Disqualifying Behaviours A robot damages competition arena (including the obstacles).	
A robot damages competition arena (including the obstacles).	DB1 □
A robot does not conform to safety requirements for the competition.	DB2 □
A robot impacts the sensitive dune area.	DB3 □
A robot enters any of the upper floors of the building.	DB4 🗖
The aerial robot leaves the flight volumes defined by the organisation.	DB5 □
The aerial robot impacts the building.	DB6 □
The aerial robot enters the building.	DB7 □
Comment: This Court is close (our) Argust v. No. WARNING: A disqualifying behaviour discards all other achievements in the current task. Use it eally necessary (e.g. cheating).	
Benchmarking data delivered appropriately: ☐ yes / ☐ no Time is 60 min after the end of the team's time-slot, formats as described in the TBM)	
Time is so that after the end of the team's time-stor, formats as described in the TBM)	

Team name:	ENSTA	TEAM
Referee I (Land):	BERNI	Referee II (Land): FRANK
Referee I (Air):	FRAN	, Referee II (Air):
Date (DD/MM/YYY	Y): 20 9	17 , Time (24:00): 16:30
Duration:	(Max. 4:	5 min) Timeout

Achievements

An aerial robot reaches the waypoints (WPs) within a radius of 5 m in autonomous navigation. Waypoints can be reached in no specific order and the team can suggest additional waypoints to their flight plan	A1.1 WP1 A	WP2 A	A1.3 WP3 A
A ground robot reaches the waypoints within a precision of 3m.	MP1 L	WP2 L	
A ground robot reaches the WPs within a precision of 3 m in autonomous navigation.	A1.6 WP3 L	A1.7 WP4 L	

Within 30 minutes of start of the run, a robot reports the correct location (within radius 5 m)	A1.8
of the missing worker outside the building.	
	ш
An aerial robot deploys the first-aid kit (within radius 2 m) from the worker outside the building.	A1.9
The aerial robot transfers the first-aid kit to the land robot outside the building.	A1.10
(It must be directly deployed on the platform or within a radius of 1 m from it)	

ŧ	Outdoor damages (building)				
The robots recognise the damages on the wall of the building.			A1.12 D2 E		A1.13 D3 Robot Domain:
(Each damage can only be scored once).	LA	_			
		71			
A robot localises the unobstructed entrance in real	l-time ir	n automatic wa	ay.		A1.14 □
Robots localise the obstructed entrances.		A1.15 E1 🔽	/	A 1 16	E2VZ
Robots localise the obstructed entrances.		Robot Doma	in: LW9		Domain:
Robots find a safe and unobstructed path to the unblocked entry of the building for a ground robot. (The path is shown on the map).					
From the starting point, a ground robot follows a sat structures) to the unobstructed building entrance.	fe path (collision free	from obstacle	es and	A1.18 🗹
Robots build an outdoor map of the land pipes area with OPIs (North-West side).					A1.19 🗆
Robots build an outdoor map of the land pipes area with OPIs (North-East side).				A1.20 □	
Robots build an outdoor map of the land pipes area with OPIs (South-West side).				A1.21 □	
Robots build an outdoor map of the land pipes area	with OF	Pls (South-Eas	t side).		A1.22 □
Set A2: Indoors					

A ground robot enters the building through the unobstructed door.	A2.1 🗹
Within 30 minutes of start of the run, a ground robot reports the correct location of the missing worker inside the building.	A2.2 🗆
The missing worker is detected in real-time in an automatic way.	A2.3 □
A ground robot deploys the first-aid kit (within radius 1 m) from the worker inside the building.	A2.4 □

	Indoor damages	
The ground robot(s) recognise the damages on the wall of the building.	D1 🗆	D2 🗆
(Each damage can only be scored once).	A2.5	A2.6

A ground robot finds a safe and unobstructed path to the machine room from the	building	/	
entrance. (The path is shown on the map).		A2.7 🗹	
From the building entrance, a ground robot follows a safe path (collision free fro	m obstacles	,	
and structures) to the machine room.			
A ground robot recognises the machine room sign in real-time and in automatic	way.	A2.9 □	
A ground robot enters the machine room.			
71	Indoor	· map	
The ground robot(s) builds a geometric indoor map of the building.	Area 1	Area 2	
(Use the best map or a combination of ground robots maps).	A2.11	A2.12	
Set A3: Cooperation			

Set A4: General

The aerial robots return to the landing area once all the tasks have been done.	A4.1
The aerial robots return to the landing area once all the tasks have been done.	A4.2□
The ground robots return to the landing area once all the tasks have been done.	A4.3□
The ground robot(s) transmits live position and images/video to the control station during the run.	A4.4
The aerial robot(s) transmits live position and images/video to the control station during the run.	A4.5□

A3.1□

The aerial robot communicates to the ground robot the safe path to the building.

Penalised Behaviours

The robot needs manual intervention during a run (e.g. the robot is stuck):			
Aerial robot	PB1 □ (max. 1)		
Ground robot 1	PB2 ☑		
Ground robot 2	PB3 □ □ (max. 2)		

The ground robot leaves the operating area.	PB4 □ (max. 1)
The ground robot changes batteries or is refuelled.	PB5 □ (max. 1)
The ground robot-1 hits the obstacles.	PB6 🗆 🗆 🗆
The ground robot-2 hits the obstacles.	PB6 🗆 🗆 🗆
The aerial robot does not keep the safety distance of 5 m with the building wall,	PB7 □ □ (max. 2)
Disqualifying Behaviours	
A robot damages competition arena (including the obstacles).	DB1 🗖
A robot does not conform to safety requirements for the competition.	DB2 □
A robot impacts the sensitive dune area:	DB3 □
A robot enters any of the upper floors of the building.	DB4 □
The aerial robot leaves the flight volumes defined by the organisation.	DB5 □
The aerial robot impacts the building.	DB6 □
The aerial robot enters the building.	DB7 □
Comment: TYING LOBOT HAY MANT LEFT FLICHT VOW WARNING: A disqualifying behaviour discards all other achievements in the current task. Use it of really necessary (e.g. cheating).	
Benchmarking data delivered appropriately: □ yes / □ no (Time is 60 min after the end of the team's time-slot, formats as described in the TBM)	
Team leader signature: A. CHAPOUTOT MAR	
Referee signature:	

Team name:	ET	H		
Referee I (Land):	Mich	IAEL	, Referee II (Land):	BERND
Referee I (Air):	BOG	LAQ X	, Referee II (Air):	
Date (DD/MM/YY	YY):	209/17		4:00): 09 : 30
Duration:		(Max. 45 n	nin) Timeout	

Achievements

An aerial robot reaches the waypoints (WPs) within a radius of 5 m in	A1.1	A1.2	A1.3
autonomous navigation. Waypoints can be reached in no specific order	WP1 A	WP2 A	WP3 A
and the team can suggest additional waypoints to their flight plan			
	A1.4	A1.5	
A ground robot reaches the waypoints within a precision of 3m.	WP1 L	WP2 L	
	dia	ø	
	A1.6	A1.7	
A ground robot reaches the WPs within a precision of 3 m in autonomous navigation.	WP3 L	WP4 L	
	dia dia		

Within 30 minutes of start of the run, a robot reports the correct location (within radius 5 m)	A1.8
of the missing worker outside the building.	
	L.
An aerial robot deploys the first-aid kit (within radius 2 m) from the worker outside the building.	A1.9
The aerial robot transfers the first-aid kit to the land robot outside the building.	A1.10
(It must be directly deployed on the platform or within a radius of 1 m from it)	
T S	

*	Outdoor damages (building)				
The robots recognise the damages on the wall of	A1.11 D1 🗆	A1.12 I	2 D2 □ A1		3 D3 □
the building.	Robot Domain:	Robot I			t Domain:
(Each damage can only be scored once).	Robot Domain.	7100012	i Bomain. Roc		2 0 1 1 1 1 1
A robot localises the unobstructed entrance in real-	-time in automatic v	vay.		A	1.14 🗖
Robots localise the obstructed entrances.	A1.15 E1 [7	A 1	16 E2 □	1
Robots rotalise the obstructed chiralities.					
	Robot Don	nain:	Kot	oot Dom	ain:
Dehote find a rafe and unabetimeted with to the year	hladrad autor afth	huilding 4		ad I	
Robots find a safe and unobstructed path to the un robot. (The path is shown on the map).	lolocked entry of the	t bullullig i	or a grou	iid	A1.17 🗖
From the starting point, a ground robot follows a safe	e path (collision fre	e from obst	acles and	i	
structures) to the unobstructed building entrance.					A1.18 🗖
Robots build an outdoor map of the land pipes area v	with OPIs (North-W	est side)			
The control of the co					A1.19 🗖
Robots build an outdoor map of the land pipes area with OPIs (North-East side).					A1.20 □
Robots build an outdoor man of the land nines area with OPIs (South-West side)				711.20	
A)				A1.21 □	
Robots build an outdoor map of the land pipes area v	with OPIs (South-Ea	ast side).			A1.22 🗆
					A1.22 L
Set A2: Indoors	*				
Set A2: Indoors					
A ground robot enters the building through the uno	bstructed door.				A2.1 🗆
Within 30 minutes of start of the run, a ground robo	of reports the correc	t location o	f the mis	sing	
worker inside the building.	or reports the correc	t location c	1 (110 11113	31115	A2.2 □
The missing worker is detected in real-time in an automatic way.					A2.3 □
A ground robot deploys the first-aid kit (within radius 1 m) from the worker inside the building.				ding	
7. 6. oana 1000t deploys the Inst-aid kit (within lad.	ido i iii, iioiii iiic w	OTKOT HISIU	c the bull	ung	A2.4 □
			Inc	loor dai	mages
The ground robot(s) recognise the damages on the	wall of the building		D1 🗆	I	D2 🗆
(Each damage can only be scored once). A2.5			A2.6		

A ground robot finds a safe and unobstructed path to the machine room from the building entrance. (The path is shown on the map).		
From the building entrance, a ground robot follows a safe path (collision free fi and structures) to the machine room.	om obstacles	A2.8 □
A ground robot recognises the machine room sign in real-time and in automatic	way.	A2.9 □
A ground robot enters the machine room.		A2.10 □
	Indoor	r map
The ground robot(s) builds a geometric indoor map of the building.	Area 1	Area 2 🗆
(Use the best map or a combination of ground robots maps).	A2.11	A2.12
Set A3: Cooperation		
Set A3. Cooperation		
The aerial robot communicates to the ground robot the safe path to the building	g.	A3.1□
Set A4: General		
The aerial robots return to the landing area once all the tasks have been done.		A4.1
The aerial robots return to the landing area once all the tasks have been done.		A4.2□
The ground robots return to the landing area once all the tasks have been done.		A4.3□
The ground robot(s) transmits live position and images/video to the control state	ion during the rur	n. A4.4□
The aerial robot(s) transmits live position and images/video to the control station	n during the run.	A4.5□
Penalised Behaviours		
The robot needs manual intervention during a run (e.g. the robot is stuck):		
Aerial robot PB1 (max. 1)		
Ground robot 1 PB2 (max. 2)		
Ground robot 2 $PB3 \square \square (max. 2)$		

The ground robot leaves the operating area.	PB4 □ (max. 1)
The ground robot changes batteries or is refuelled.	PB5 □ (max. 1)
The ground robot-1 hits the obstacles.	PB6 🗆 🗆 🗆
The ground robot-2 hits the obstacles.	PB6 □ □ □ □
The aerial robot does not keep the safety distance of 5 m with the building wall,	PB7 □ □ (max. 2)
Disqualifying Behaviours	
A robot damages competition arena (including the obstacles).	DB1 🗆
A robot does not conform to safety requirements for the competition.	DB2 □
A robot impacts the sensitive dune area.	DB3 🗆
A robot enters any of the upper floors of the building.	DB4 □
The aerial robot leaves the flight volumes defined by the organisation.	DB5 🗆
The aerial robot impacts the building.	DB6 □
The aerial robot enters the building.	DB7 🗖
Comment:	only when it is
Benchmarking data delivered appropriately: ☐ yes / ☐ no	
(Time is 60 min after the end of the team's time-slot, formats as described in the TBM)	
Team leader signature:	
Referee signature:	

Team name: IMM + PIOMBINO			
Referee I (Land): , Referee II (Land):	MANJ-	ARTIN	R
Referee I (Air): Referee II (Air):			
Date (DD/MM/YYYY): 20 9 17 , Time (2			
Duration: (Max. 45 min) ☐ Timeout			
Achievements			
Achievements			
Set A1: Outdoors			-1
	check lo	3	alo
An aerial robot reaches the waypoints (WPs) within a radius of 5 m in	A1.1	A1.2	A1.3
autonomous navigation. Waypoints can be reached in no specific order	WP1 A	WP2 A	WP3 A
and the team can suggest additional waypoints to their flight plan			
	A1.4	A1.5	
A ground robot reaches the waypoints within a precision of 3m.	WP1 L	WP2 L	
	t\dot	Ø	
A ground robot reaches the WPs within a precision of 3 m in autonomous	A1.6	A1.7	
navigation.	WP3 L	WP4 L	
~6.8m	₩.	囡	2
Wishin 20 minutes of start of the many and a start of the	1.:		
Within 30 minutes of start of the run, a robot reports the correct location (wit of the missing worker outside the building.	nin radius 5 r	n)	A1.8
			A10
An aerial robot deploys the first-aid kit (within radius 2 m) from the worker	outside the b	uilding.	A1.9
The aerial robot transfers the first-aid kit to the land robot outside the buildi	ng.		A1.10
(It must be directly deployed on the platform or within a radius of low from it)			

₹		Outdo	oor damages	s (buile	ding)	
The robots recognise the damages on the wall of	A1.11 D1 🗹		A1.12 D2 🗆		A1.	13 D3 □
the building.	Robo	ot Domain:	Robot Dom	ain:	Rob	ot Domain;
(Each damage can only be scored once).	LAN	10	s====-		,	
A robot localises the unobstructed entrance in real-	-time ii	n automatic wa	ny.		1	A1.14 🗹
		A1.15 E1 🗹	/		(EQ I	/
Robots localise the obstructed entrances.					6 E2 I	
		Robot Doma	in: LAWO	Robo	t Don	nain: Ltri D
Robots find a safe and unobstructed path to the unblocked entry of the building for a ground robot. (The path is shown on the map).				A1.17 🗹		
From the starting point, a ground robot follows a safe path (collision free from obstacles and structures) to the unobstructed building entrance.					A1.18 🔯	
Robots build an outdoor map of the land pipes area v	with Ol	PIs (North-Wes	st side).			A1.19 🗹
Robots build an outdoor map of the land pipes area with OPIs (North-East side).				A1.20 🗖		
Robots build an outdoor map of the land pipes area v	with Ol	Pls (South-Wes	st side).		2	A1.21 🗆
Robots build an outdoor map of the land pipes area with OPIs (South-East side).				A1.22 🗆		
Set A2: Indoors						
A ground robot enters the building through the uno	bstruct	ed door.				A2.1 😿

A ground robot enters the building through the unobstructed door.	A2.1
Within 30 minutes of start of the run, a ground robot reports the correct location of the missing worker inside the building.	A2.2 🗹
The missing worker is detected in real-time in an automatic way.	A2.3 🗹
A ground robot deploys the first-aid kit (within radius 1 m) from the worker inside the building.	A2.4 🗆

	Indoor damages		
The ground robot(s) recognise the damages on the wall of the building.	D1 🗆	D2 🗆	
(Each damage can only be scored once).	A2.5	A2.6	

A ground robot finds a safe an entrance. (The path is shown on	d unobstructed path to the machine room from the the map).	building	A2.7 🗹
From the building entrance, a g	round robot follows a safe path (collision free fro	m obstacles	/
and structures) to the machine re	oom.		A2.8 🗹
A ground robot recognises the	machine room sign in real-time and in automatic	way.	A2.9 🗹
A ground robot enters the mac	hine room.		42.10.00
			A2.10 👿
		Indooi	· map
The ground robot(s) builds a g	eometric indoor map of the building.	Area 1 🗆	Area 2
(Use the best map or a combina	tion of ground robots maps).	A2.11	A2.12
			2
Set A3: Cooperation			
-	12°		
The aerial robot communicates	to the ground robot the safe path to the building	•	A3.1□
Set A4: General			
The aerial robots return to the	anding area once all the tasks have been done.		
The actial robots leturn to the	landing area once all the tasks have been done.		A4.1
The aerial robots return to the	anding area once all the tasks have been done.		A4.2□
The ground robots return to the	e landing area once all the tasks have been done.		A4.3□
The ground robot(s) transmits	live position and images/video to the control station	on during the rur	A4.4
The aerial robot(s) transmits liv	ve position and images/video to the control station	during the run.	A4.5
	7		
6 -			
Penalised Behavio	urs		2
The robot needs manual interver	ntion during a run (e.g. the robot is stuck):		
Aerial robot	PB1 □ (max. 1)		
Ground robot 1	PB2 □ □ (max. 2)		
	1		

PB3 □ □ (max. 2)

Ground robot 2

The ground robot leaves the operating area.	PB4 □ (max. 1)
The ground robot changes batteries or is refuelled.	PB5 □ (max. 1)
The ground robot-1 hits the obstacles.	PB6 □ □ □ □
The ground robot-2 hits the obstacles.	PB6 🗆 🗆 🗆
The aerial robot does not keep the safety distance of 5 m with the building wall.	PB7 □ □ (max. 2
Disqualifying Behaviours	ε
A robot damages competition arena (including the obstacles).	DB1 🗖
A robot does not conform to safety requirements for the competition.	DB2 □
A robot impacts the sensitive dune area:	DB3 □
A robot enters any of the upper floors of the building.	DB4 □
The aerial robot leaves the flight volumes defined by the organisation.	DB5 🗖
The aerial robot impacts the building.	DB6 □
The aerial robot enters the building.	DB7 🗖
Comment: Pargerous (10w) Hyring. WARNING: A disqualifying behaviour discards all other achievements in the current task. Use it or really necessary (e.g. cheating).	nly when it is
Benchmarking data delivered appropriately:	
Referee signature:	

Team name:	RAPTORS	
Referee I (Land):	MICHAEL	Referee II (Land): HANT - ACTUR
Referee I (Air):	FRAN	, Referee II (Air):
Date (DD/MM/YY	YY): 209 17	, Time (24:00):
Duration:	(Max. 45	min) 🖸 Timeout

Achievements

An aerial robot reaches the waypoints (WPs) within a radius of 5 m in		A1.2	A1.3
autonomous navigation. Waypoints can be reached in no specific order and the team can suggest additional waypoints to their flight plan	WP1 A	WP2 A	WP3 A
	A1.4	A1.5	
A ground robot reaches the waypoints within a precision of 3m.	WP1 L	WP2 L	
	☑ .	Œ	
	A1.6	A1.7	-
A ground robot reaches the WPs within a precision of 3 m in autonomous navigation.	WP3 L	WP4 L	

Within 30 minutes of start of the run, a robot reports the correct location (within radius 5 m)	A1.8
of the missing worker outside the building.	
An aerial robot deploys the first-aid kit (within radius 2 m) from the worker outside the building.	A1.9
	da/
The aerial robot transfers the first-aid kit to the land robot outside the building.	A1.10
(It must be directly deployed on the platform or within a radius of 1 m from it)	D8

₹	Outdoor damages (building)						
The robots recognise the damages on the wall of	A	1.11 D1 🗹	A1.12 D2 🗹 A1		A 1	A1.13 D3	
the building.	Robo	ot Domain:	Robot Domain: Ro		Rob	Robot Domain:	
(Each damage can only be scored once).	Lh	~1)	LAND		LAND		
A robot localises the unobstructed entrance in real-	-time ii	automatic wa	y.			A1.14	
						A1.14 🗷	
Robots localise the obstructed entrances .		A1.15 E1 🕅		A1.10	E2	10/	
Robots localise the obstructed entrances.							
		Robot Domai	n: Lkn)	Robo	t Doı	main: LAND	
Robots find a safe and unobstructed path to the un	blocke	d entry of the b	ouilding for a	groun	d		
robot. (The path is shown on the map).					A1.17 🔽		
From the starting point, a ground robot follows a safe path (collision free from obstacles and							
structures) to the unobstructed building entrance.				A1.18 🔽			
	141 01	N (N d 11)					
Robots build an outdoor map of the land pipes area with OPIs (North-West side).				A1.19 🗖			
Robots build an outdoor map of the land pipes area with OPIs (North-East side).				A1.20 □			
				711.20			
Robots build an outdoor map of the land pipes area with OPIs (South-West side).					A1.21 □		
Robots build an outdoor map of the land pipes area with OPIs (South-East side).				A1.22 🗆			
						711.22 —	
Set A2: Indoors							
Set A2. Huddis	Set A2. Indoors						

A ground robot enters the building through the unobstructed door,	A2.1
Within 30 minutes of start of the run, a ground robot reports the correct location of the missing worker inside the building.	A2.2 □
The missing worker is detected in real-time in an automatic way.	A2.3 □
A ground robot deploys the first-aid kit (within radius 1 m) from the worker inside the building.	A2.4 🗆

	Indoor damages	
The ground robot(s) recognise the damages on the wall of the building.	D1 🗆	D2 🗆
(Each damage can only be scored once).	A2.5	A2.6

A ground robot finds a safe and unobstructed path to the machine room from the building entrance. (The path is shown on the map).	A2.7 🗹
From the building entrance, a ground robot follows a safe path (collision free from obstacles and structures) to the machine room.	A2.8 🗹
A ground robot recognises the machine room sign in real-time and in automatic way.	A2.9 🗹
A ground robot enters the machine room.	A2.10

	Indoor map	
The ground robot(s) builds a geometric indoor map of the building.	Area 1 🔽	Area 2
(Use the best map or a combination of ground robots maps).	A2.11	A2.12

Set A3: Cooperation

The aerial robot communicates to the ground robot the safe path to the building.	A3.1□
--	-------

Set A4: General

The aerial robots return to the landing area once all the tasks have been done.	A4.10
The aerial robots return to the landing area once all the tasks have been done.	A4.2□
The ground robots return to the landing area once all the tasks have been done.	A4.3□
The ground robot(s) transmits live position and images/video to the control station during the run.	A4.412
The aerial robot(s) transmits live position and images/video to the control station during the run.	A4.5

Penalised Behaviours

The robot needs manual interven	ntion during a run (e.g. the robot is stuck):
Aerial robot	PB1 □ (max. 1)
Ground robot 1	PB2 □ □ (max. 2)
Ground robot 2	PB3 □ □ (max. 2)

The ground robot leaves the operating area.	PB4 □ (max. 1)
The ground robot changes batteries or is refuelled.	PB5 □ (max. 1)
The ground robot-1 hits the obstacles.	PB6 🗆 🗆 🗆
The ground robot-2 hits the obstacles.	PB6 🗆 🗆 🗆
The aerial robot does not keep the safety distance of 5 m with the building wall.	PB7 □ □ (max. 2)
Disqualifying Behaviours	
A robot damages competition arena (including the obstacles).	DB1 □
A robot does not conform to safety requirements for the competition.	DB2 □
A robot impacts the sensitive dune area.	DB3 □
A robot enters any of the upper floors of the building.	DB4 □
The aerial robot leaves the flight volumes defined by the organisation.	DB5 🗆
The aerial robot impacts the building.	DB6 □
The aerial robot enters the building.	DB7 □
Comment: WARNING: A disqualifying behaviour discards all other achievements in the current task. Use it or really necessary (e.g. cheating).	only when it is
Benchmarking data delivered appropriately: □ yes / □ no (Time is 60 min after the end of the team's time-slot, formats as described in the TBM)	
Team leader signature: Mateur Ull (LANO)	
Referee signature	

Team name: TELEROS + 15	L ?
Referee I (Land): HANS - thou ?	, Referee II (Land):
Referee I (Air): BO GD AN	, Referee II (Air):
Date (DD/MM/YYYY): 20 9 17	, Time (24:00): 10:30
Duration: 40 Mins (Max. 45 n	nin) 🗆 Timeout

Achievements

An aerial robot reaches the waypoints (WPs) within a radius of 5 m in autonomous navigation. Waypoints can be reached in no specific order and the team can suggest additional waypoints to their flight plan	WP1 A	A1.2 WP2 A	A1.3 WP3 A
A ground robot reaches the waypoints within a precision of 3m.	A1.4 WP1 L	A1.5 WP2 L	
A ground robot reaches the WPs within a precision of 3 m in autonomous navigation.	A1.6 WP3 L	A1.7 WP4 L	

Within 30 minutes of start of the run, a robot reports the correct location (within radius 5 m)	A1.8
of the missing worker outside the building.	\D
An aerial robot deploys the first-aid kit (within radius 2 m) from the worker outside the building.	A1.9
The aerial robot transfers the first-aid kit to the land robot outside the building.	A1.10
(It must be directly deployed on the platform or within a radius of 1 m from it)	

र	Outdoor damages (building)					
The robots recognise the damages on the wall of	A	1.11 D1 🔽	A1.12 D2		A1.13 D3 🗹	
the building.	Robo	ot Domain:	Robot Dom	ain:	Robot Domain	ւ։
(Each damage can only be scored once).	LA	m.V	LAND		LAND	
			16:			
A robot localises the unobstructed entrance in real-	time ir	n automatic wa	y.		A1.14 🗖	
Debate leveling the obstance of outcomes		A1.15 E1		A 1 14	6 E2 ☑	_
Robots localise the obstructed entrances .			1.4			
		Robot Doma	in: Land	Robo	t Domain: LAN	_
Robots find a safe and unobstructed path to the un	blocke	d entry of the b	ouilding for a	ground		1
robot. (The path is shown on the map).					A1.17	9
From the starting point, a ground robot follows a safe	nath (collision free	from obstacle	es and		
structures) to the unobstructed building entrance.	patii (comsion nec	TOTT ODSLACT	.s and	A1.18	<u> 1</u>
2						
Robots build an outdoor map of the land pipes area with OPIs (North-West side).			A1.19 🗆	כ		
Robots build an outdoor map of the land pipes area v	vith OF	Pls (North-East	side)			
Troots build all outdoor map of the land pipes area v	, iui 01	is (Trotal Basi	. siao).		A1.20 □]
Robots build an outdoor map of the land pipes area v	vith OF	PIs (South-Wes	st side).		A1.21 🗆	ַ
Robots build an outdoor map of the land pipes area v	vith OF	Pls (South-East	side)			_
Robots build all butdoor map of the land pipes area v	vitii Oi	13 (500011-1203)	. side).		A1.22]
Set A2: Indoors						

A ground robot enters the building through the unobstructed door.	A2.1
Within 30 minutes of start of the run, a ground robot reports the correct location of the missing worker inside the building.	A2.2
The missing worker is detected in real-time in an automatic way.	A2.3 □
A ground robot deploys the first-aid kit (within radius 1 m) from the worker inside the building.	A2.4 □

	Indoor d	amages
The ground robot(s) recognise the damages on the wall of the building.	D1 🗆	D2 🗆
(Each damage can only be scored once).	A2.5	A2.6

Indoor	map
A ground robot enters the machine room.	A2.10 🔽
A ground robot recognises the machine room sign in real-time and in automatic way.	A2.9 □
From the building entrance, a ground robot follows a safe path (collision free from obstacles and structures) to the machine room.	A2.8 🗹
A ground robot finds a safe and unobstructed path to the machine room from the building entrance. (The path is shown on the map).	A2.7 🔽

	Indoor map	
The ground robot(s) builds a geometric indoor map of the building.	Area 1 🔽	Area 2 🗹
(Use the best map or a combination of ground robots maps).	A2.11	A2.12

Set A3: Cooperation

The aerial robot communicates to the ground robot the safe path to the building.	A3.1□

Set A4: General

The aerial robots return to the landing area once all the tasks have been done.	A4.1□
The aerial robots return to the landing area once all the tasks have been done.	A4.2□
The ground robots return to the landing area once all the tasks have been done.	A4.3
The ground robot(s) transmits live position and images/video to the control station during the run.	A4.4🗹
The aerial robot(s) transmits live position and images/video to the control station during the run.	A4.5□

Penalised Behaviours

The robot needs manual interven	ntion during a run (e.g. the robot is stuck):	
Aerial robot	PB1 □ (max. 1)	
Ground robot 1	PB2 □ □ (max. 2)	
Ground robot 2	PB3 □ □ (max. 2)	7

The ground robot leaves the operating area.	PB4 □ (max. 1)
The ground robot changes batteries or is refuelled.	PB5 □ (max. 1)
The ground robot-1 hits the obstacles.	PB6 □ □ □ □
The ground robot-2 hits the obstacles.	PB6 □ □ □ □
The aerial robot does not keep the safety distance of 5 m with the building wall.	PB7 □ □ (max. 2)
Disqualifying Behaviours	
A robot damages competition arena (including the obstacles).	DB1 □
A robot does not conform to safety requirements for the competition.	DB2 □
A robot impacts the sensitive dune area.	DB3 □
A robot enters any of the upper floors of the building.	DB4 □
The aerial robot leaves the flight volumes defined by the organisation.	DB5 🗖
The aerial robot impacts the building.	DB6 □
The aerial robot enters the building.	DB7 🗖
Comment:	only when it is
Benchmarking data delivered appropriately: pes / pes / no (Time is 60 min after the end of the team's time-slot, formats as described in the TBM) Team leader signature:	
Poforos signaturos	