

a) 3D map UAV initial and final positions

	Crowded Large map		
	UAV 1	UAV 2	UAV 3
<i>Initial</i>	(0, 0, 0)	(0, 500, 0)	(0, 1000, 0)
<i>Final</i>	(1000, 1000, 1000)	(1000, 500, 1000)	(1000, 0, 1000)

b) 3D map boundary

Map	Start boundary	End Boundary
Crowded Large map	(0, 0, 0)	(1000, 1000, 1000)

c) 3D obstacles for relevant map

Obstacles number	Crowded Large map	Obstacles number	Crowded Large map	Obstacles number	Crowded Large map
1	(10, 890, 0) - (40, 920, 15)	51	(210, 190, 0) - (240, 220, 15)	101	(910, 180, 0) - (940, 210, 15)
2	(30, 930, 0) - (60, 960, 15)	52	(0, 160, 0) - (30, 190, 15)	102	(920, 250, 0) - (950, 280, 15)
3	(70, 940, 0) - (100, 970, 15)	53	(50, 140, 0) - (80, 170, 15)	103	(850, 270, 0) - (880, 300, 15)
4	(160, 940, 0) - (190, 970, 15)	54	(90, 120, 0) - (120, 150, 15)	104	(830, 320, 0) - (870, 350, 15)
5	(110, 930, 0) - (140, 960, 15)	55	(50, 80, 0) - (80, 110, 15)	105	(890, 290, 0) - (920, 320, 15)
6	(60, 890, 0) - (90, 920, 15)	56	(160, 50, 0) - (190, 80, 15)	106	(690, 450, 0) - (720, 480, 15)
7	(30, 850, 0) - (60, 880, 15)	57	(190, 110, 0) - (220, 140, 15)	107	(575, 480, 0) - (605, 510, 15)
8	(80, 850, 0) - (110, 880, 15)	58	(260, 140, 0) - (290, 170, 15)	108	(650, 520, 0) - (680, 550, 15)
9	(100, 890, 0) - (130, 920, 15)	59	(150, 290, 0) - (180, 320, 15)	109	(720, 510, 0) - (750, 540, 15)
10	(140, 880, 0) - (170, 910, 15)	60	(130, 150, 0) - (160, 180, 15)	110	(660, 570, 0) - (690, 600, 15)
11	(180, 900, 0) - (210, 930, 15)	61	(220, 0, 0) - (300, 80, 45)	111	(620, 620, 0) - (650, 650, 15)
12	(200, 860, 0) - (230, 890, 15)	62	(330, 200, 0) - (390, 230, 25)	112	(720, 570, 0) - (750, 600, 15)

13	(160, 840, 0) - (190, 870, 15)	63	(330, 0, 0) - (550, 160, 60)	113	(670, 660, 0) - (700, 690, 15)
14	(210, 820, 0) - (240, 850, 15)	64	(500, 190, 0) - (540, 260, 20)	114	(710, 620, 0) - (740, 650, 15)
15	(170, 800, 0) - (200, 830, 15)	65	(570, 20, 0) - (610, 90, 25)	115	(780, 530, 0) - (810, 560, 15)
16	(130, 880, 0) - (160, 810, 15)	66	(600, 150, 0) - (630, 180, 15)	116	(720, 690, 0) - (750, 720, 15)
17	(120, 820, 0) - (150, 850, 15)	67	(610, 110, 0) - (640, 140, 15)	117	(770, 570, 0) - (800, 600, 15)
18	(90, 750, 0) - (120, 780, 15)	68	(600, 50, 0) - (690, 80, 15)	118	(820, 550, 0) - (850, 580, 15)
19	(80, 800, 0 - 110, 830, 15)	69	(580, 180, 0) - (610, 220, 15)	119	(810, 590, 0) - (840, 620, 15)
20	(40, 810, 0) - (70, 840, 15)	70	(700, 80, 0) - (730, 110, 15)	120	(760, 680, 0) - (790, 710, 15)
21	(60, 700, 0) - (90, 730, 15)	71	(650, 100, 0) - (680, 130, 15)	121	(790, 630, 0) - (820, 660, 15)
22	(110, 680, 0) - (140, 710, 15)	72	(650, 150, 0) - (680, 180, 15)	122	(860, 570, 0) - (890, 600, 15)
23	(160, 650, 0) - (190, 680, 15)	73	(630, 190, 0) - (660, 220, 15)	123	(850, 610, 0) - (880, 640, 15)
24	(50, 630, 0) - (80, 660, 15)	74	(600, 230, 0) - (630, 260, 15)	124	(830, 650, 0) - (870, 680, 15)
25	(30, 590, 0) - (60, 620, 15)	75	(640, 240, 0) - (670, 270, 15)	125	(810, 690, 0) - (840, 720, 15)
26	(80, 590, 0) - (110, 620, 15)	76	(670, 190, 0) - (700, 220, 15)	126	(830, 770, 0) - (870, 860, 20)
27	(120, 590, 0) - (150, 620, 15)	77	(690, 120, 0) - (720, 150, 15)	127	(620, 800, 0) - (820, 1000, 45)
28	(200, 600, 0) - (230, 630, 15)	78	(730, 10, 0) - (760, 40, 15)	128	(500, 810, 0) - (570, 840, 20)
29	(160, 580, 0) - (190, 610, 15)	79	(770, 50, 0) - (800, 80, 15)	129	(490, 870, 0) - (610, 1000, 40)
30	(220, 560, 0) - (250, 590, 15)	80	(740, 100, 0) - (770, 130, 15)	130	(415, 910, 0) - (455, 980, 15)
31	(50, 550, 0) - (80, 580, 15)	81	(730, 140, 0) - (760, 170, 15)	131	(340, 920, 0) - (370, 950, 15)
32	(100, 550, 0) - (130, 580, 15)	82	(710, 180, 0) - (740, 210, 15)	132	(290, 900, 0) - (320, 930, 15)
33	(60, 510, 0) - (90, 540, 15)	83	(680, 230, 0) - (710, 260, 15)	133	(360, 870, 0) - (390, 900, 15)
34	(140,520,0) - (170, 550, 15)	84	(670, 300, 0) - (700, 330, 15)	134	(270, 850 ,0) - (300, 880, 15)
35	(60, 450 ,0) - (90, 480, 15)	85	(730, 310, 0) - (760, 340, 15)	135	(320, 830, 0) - (350, 850, 15)
36	(110, 450, 0) - (140, 480, 15)	86	(730, 240, 0) - (760, 270, 15)	136	(370, 800, 0) - (400, 830, 15)
37	(150, 580, 0) - (180, 510, 15)	87	(750, 200, 0) - (780, 230, 15)	137	(410, 780, 0) - (440, 810, 15)
38	(190, 500, 0) - (220, 530, 15)	88	(770, 160, 0) - (800, 190, 15)	138	(425, 730, 0) - (455, 760, 15)
39	(180, 540, 0) - (210, 570, 15)	89	(810, 80, 0) - (840, 110, 15)	139	(460, 680, 0) - (490, 710, 15)
40	(230, 520, 0) - (260, 550, 15)	90	(780, 120, 0) - (810, 150, 15)	140	(390, 670 ,0) - (420, 700, 15)
41	(80, 390, 0) - (110, 420, 15)	91	(835, 40, 0) - (865, 70, 15)	141	(360, 730, 0) - (390, 760, 15)
42	(30, 360, 0) - (60, 390, 15)	92	(850, 110, 0) - (880, 140, 15)	142	(320, 750, 0) - (350, 780, 15)

43	(120 , 340, 0) - (150, 370, 15)	93	(890, 65, 0) - (920, 95, 15)	143	(280, 780, 0) - (310, 810, 15)
44	(30, 300, 0) - (60, 330, 15)	94	(900, 120, 0) - (930, 150, 15)	144	(220, 760, 0) - (250, 790, 15)
45	(10, 260, 0) - (40, 290, 15)	95	(860, 160, 0) - (890, 190, 15)	145	(260, 710, 0) - (230, 740, 15)
46	(60, 260, 0) - (90, 290, 15)	96	(820, 190, 0) - (850, 220, 15)	146	(310, 650 ,0) - (330, 680, 15)
47	(140, 250, 0) - (170, 280, 15)	97	(770, 240, 0) - (800, 270, 15)	147	(350, 620, 0) - (380, 650, 15)
48	(40, 200, 0) - (70, 230, 15)	98	(780, 300, 0) - (810, 330, 15)	148	(425, 850, 0) - (455, 880, 15)
49	(100, 200, 0) - (130, 230, 15)	99	(810, 250, 0) - (840, 280, 15)	149	(470, 760, 0) - (500, 790, 15)
50	(160, 210, 0) - (190, 240, 15)	100	(865, 210, 0) - (895, 240, 15)	150	(310, 700, 0) - (340, 730, 15)