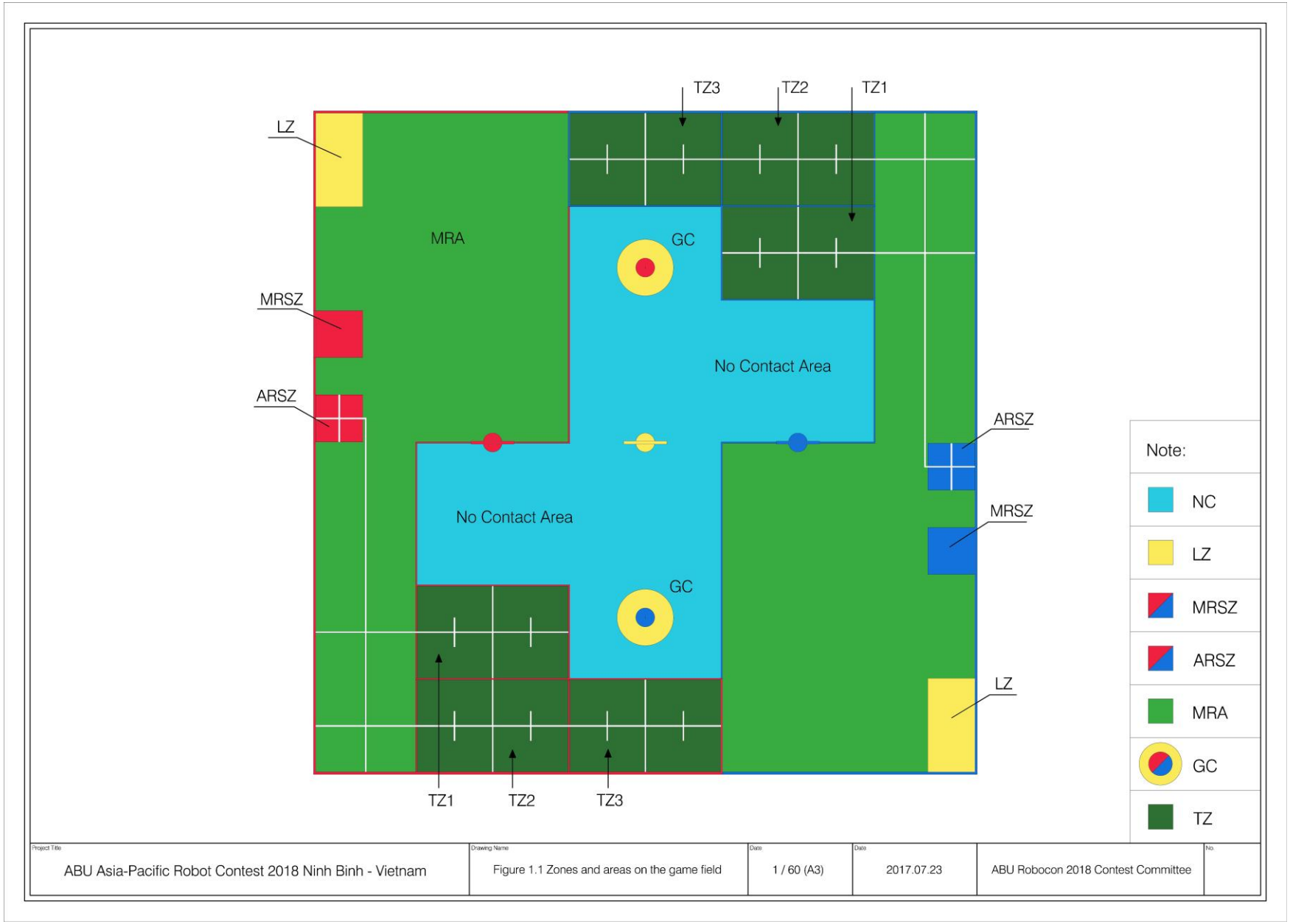
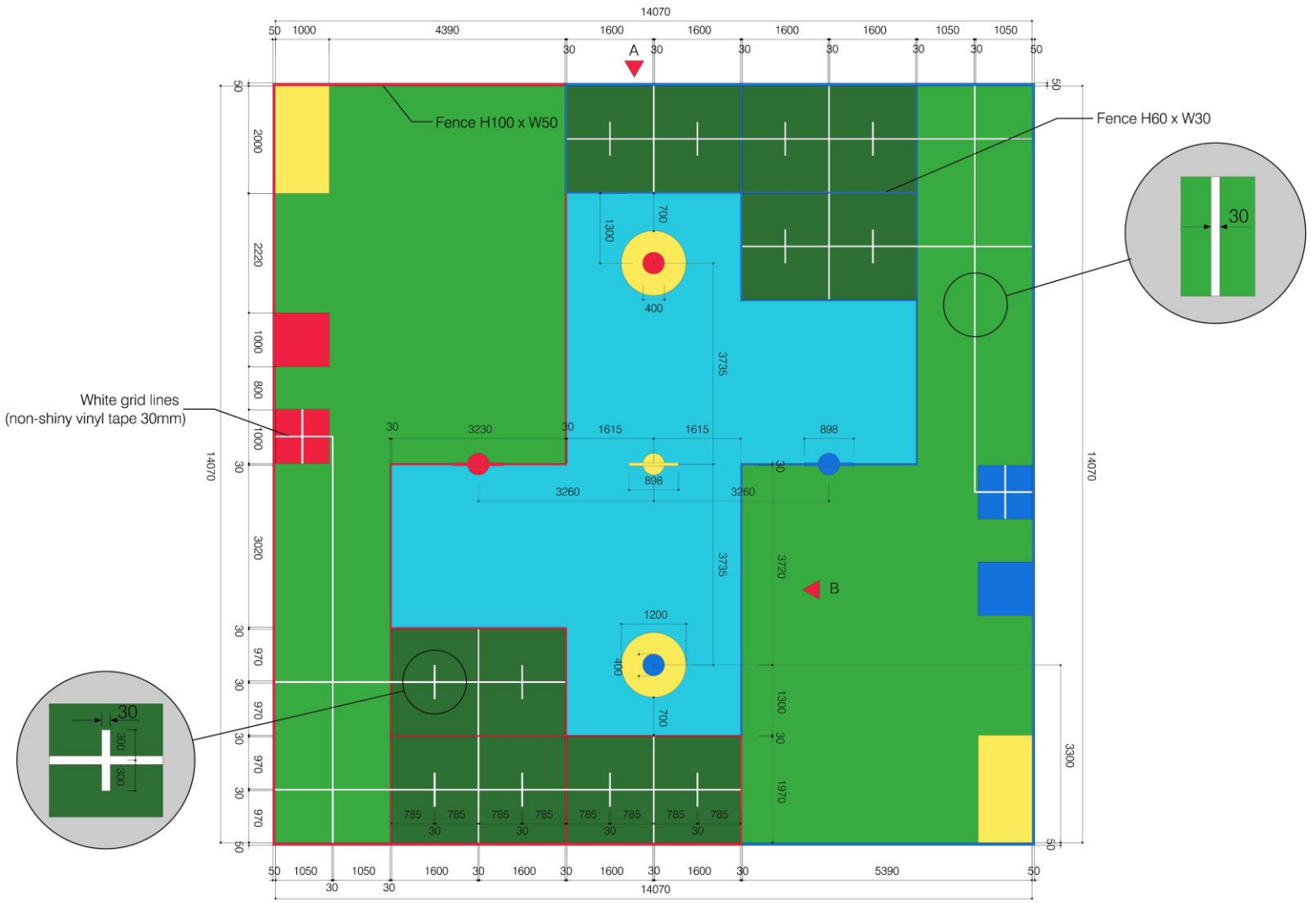
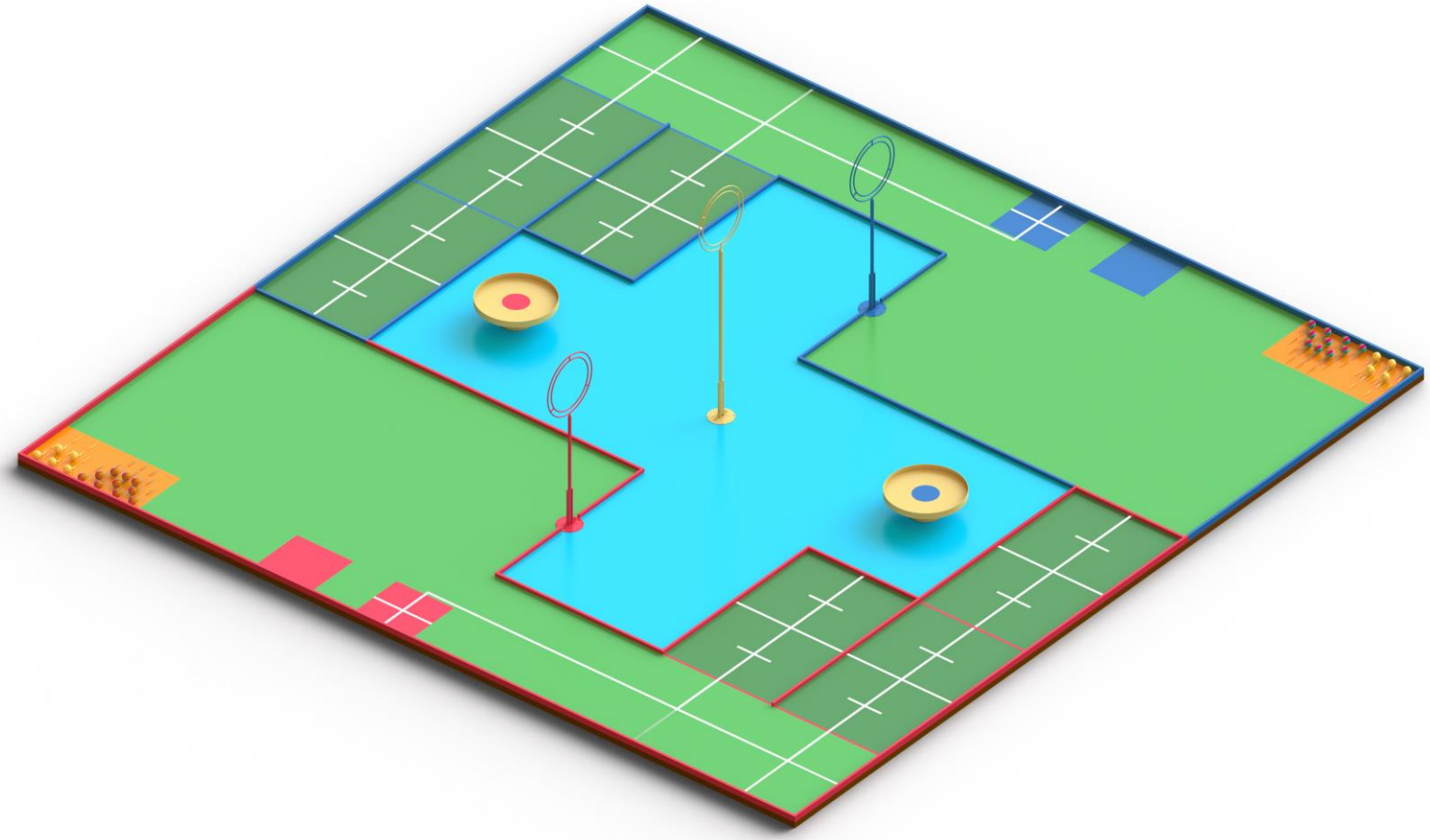
V. APPENDIX

1. Game field



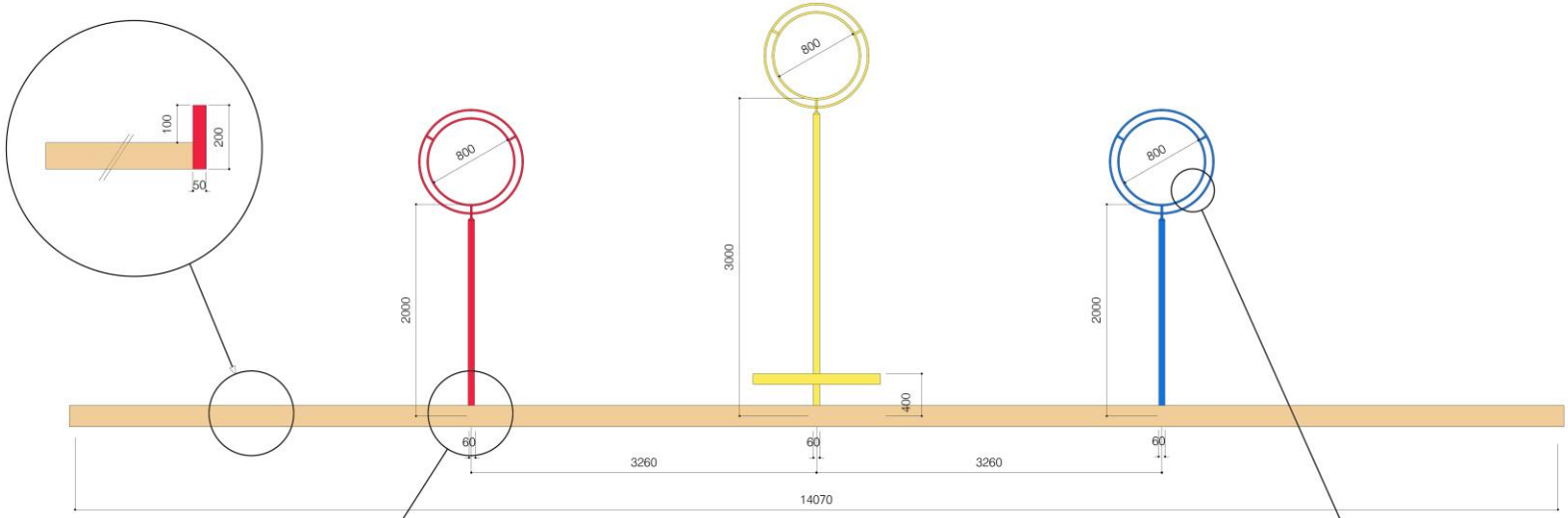


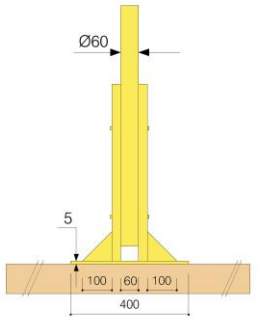
Project Title	Drawing Name	Date	Date		No.
ABU Asia-Pacific Robot Contest 2018 Ninh Binh - Vietnam	Figure 1.2 Game field top view	1 / 60 (A3)	2017.07.23	ABU Robocon 2018 Contest Committee	

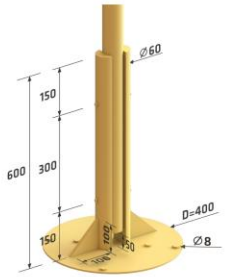


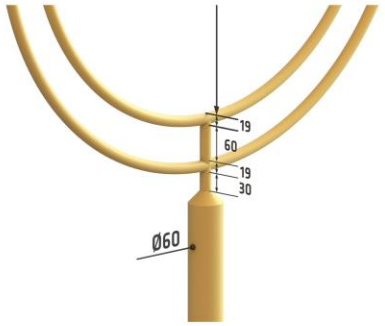
Project Title	Drawing Name	Date	Date		No.
ABU Asia-Pacific Robot Contest 2018 Ninh Binh - Vietnam	Figure 1.3 Game field : Isometoric View	1 / 60 (A3)	2017.07.23	ABU Robocon 2018 Contest Committee	

Side View from A

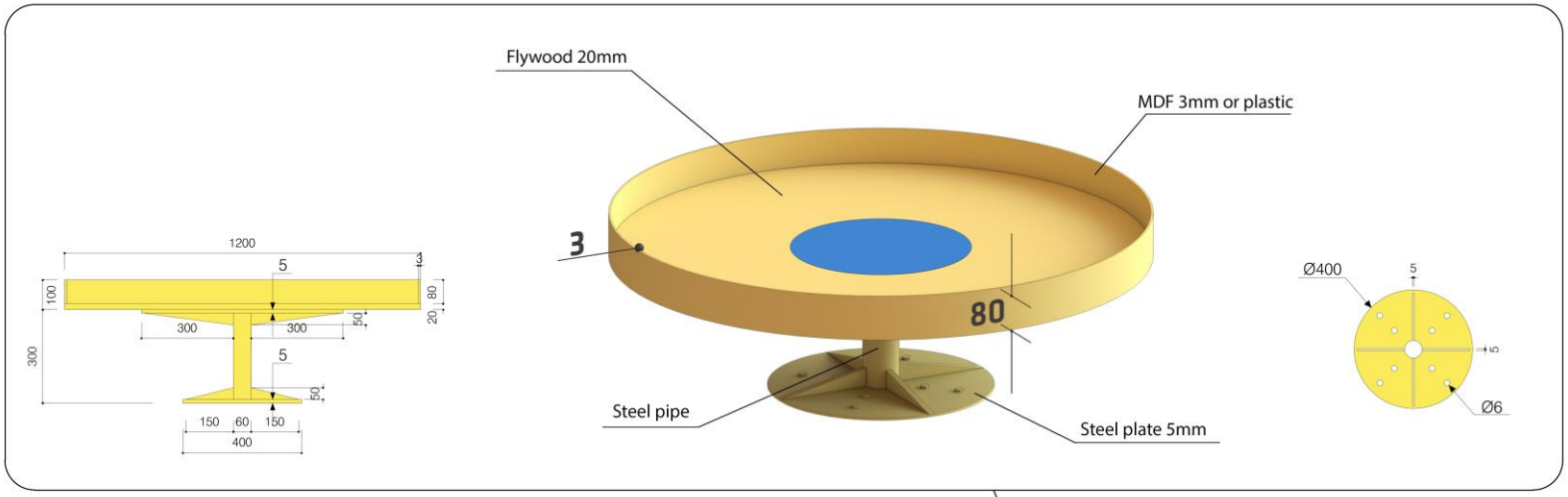


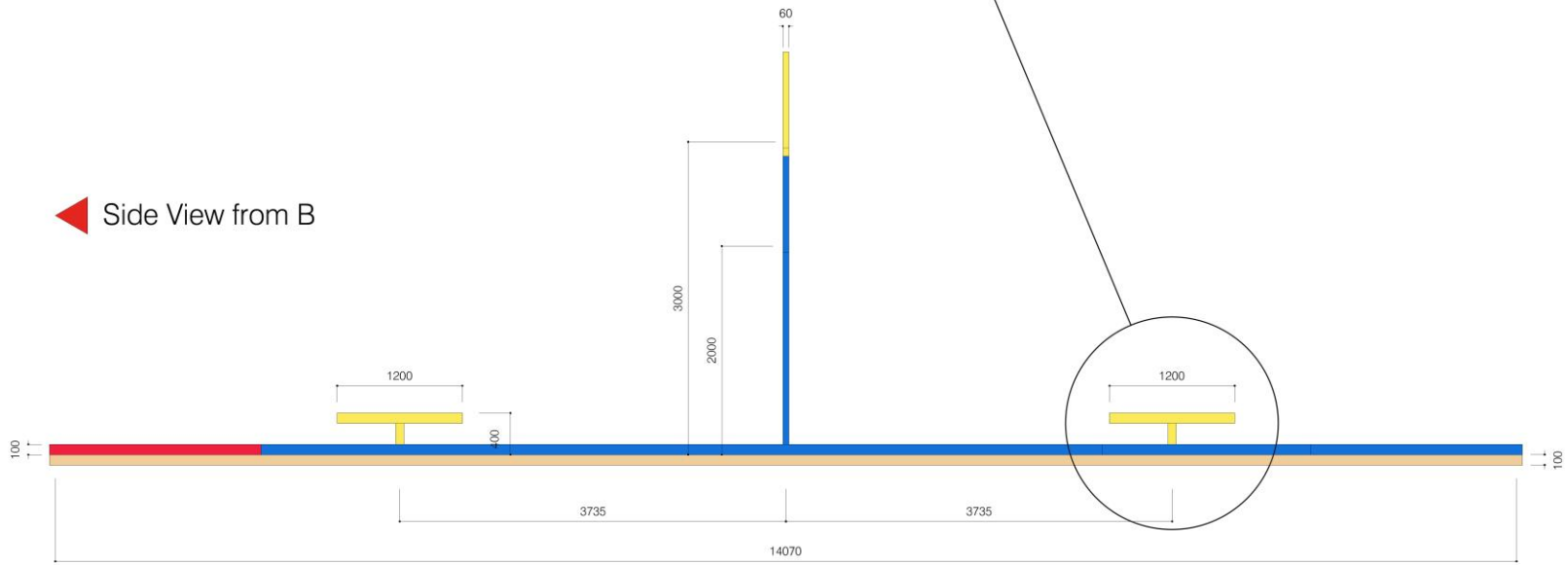




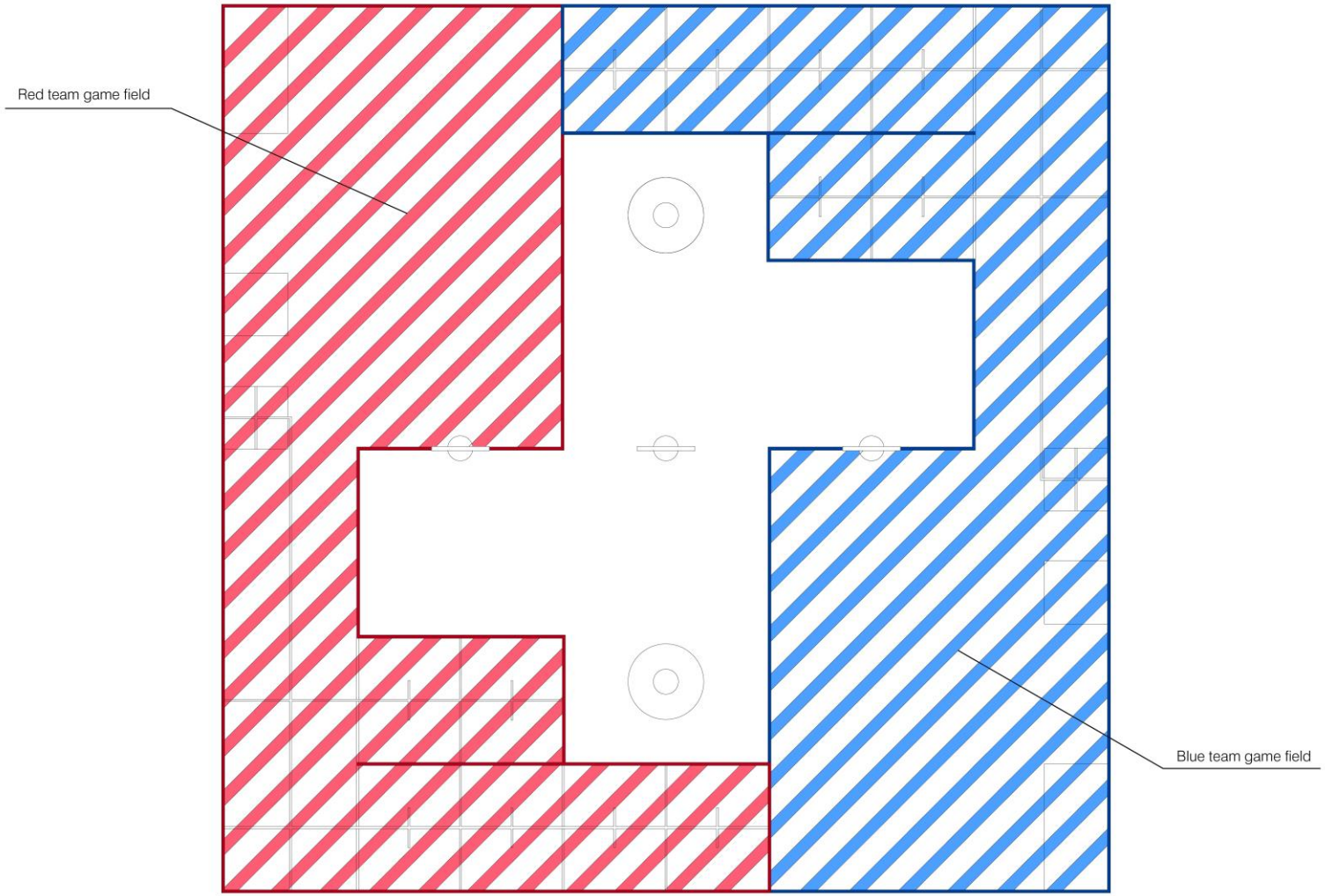


Project Title	Drawing Name	Date	Date		No.
ABU Asia-Pacific Robot Contest 2018 Ninh Binh - Vietnam	Figure 1.4 Ring, Golden Ring, Ring Trees	1 / 60 (A3)	2017.07.23	ABU Robocon 2018 Contest Committee	





Project Title	Drawing Name	Date	Date		No.
ABU Asia-Pacific Robot Contest 2018 Ninh Binh - Vietnam	Figure 1.5 : Golden Cup	1 / 60 (A3)	2018.07.23	ABU Robocon 2018 Contest Committee	



Project Title	Drawing Name	Date	Date		No.
ABU Asia-Pacific Robot Contest 2018 Ninh Binh - Vietnam	Figure 1.6 Team Game Field	1 / 60 (A3)	2017.07.23	ABU Robocon 2018 Contest Committee	

2. Material for game field

Table 1: Material and color standard

Description	Material	Color	Color Standard Pantone
Red Team game field			
Manual Robot Starting Zone (MRSZ)	Plywood; water paint	Dark Red	PANTONE 1787 C
Automatic Robot Starting Zone (ARSZ)	Plywood; water paint	Dark Red	PANTONE 1787 C
Loading Zone (LZ)	Plywood; water paint	Yellow	PANTONE 3935 C
Manual Robot Area (MRA)	Plywood; water paint	Green	PANTONE 7738 C
Throwing Zone 1 (TZ1)	Plywood; water paint	Dark Green	PANTONE 7742 C
Throwing Zone 2 (TZ2)	Plywood; water paint	Dark Green	PANTONE 7742 C
Throwing Zone 3 (TZ3)	Plywood; water paint	Dark Green	PANTONE 7742 C
Fence	Steel; oil paint	Light Red	PANTONE 1785 C
Border Line between MRA and TZ1	Water paint	Light Red	PANTONE 1785 C
Border Line between MRA and TZ2	Water paint	Light Red	PANTONE 1785 C
Border Line between MRA and TZ3	Water paint	Light Red	PANTONE 1785 C
Blue Team game field			
Manual Robot Starting Zone (MRSZ)	Plywood; water paint	Dark Blue	PANTONE 2727 C
Automatic Robot Starting Zone (ARSZ)	Plywood; water paint	Dark Blue	PANTONE 2727 C
Loading Zone (LZ)	Plywood; water paint	Yellow	PANTONE 3935 C
Manual Robot Area (MRA)	Plywood; water paint	Green	PANTONE 7738 C

Description	Material	Color	Color Standard Pantone
Throwing Zone 1 (TZ1)	Plywood; water paint	Dark Green	PANTONE 7738 C
Throwing Zone 2 (TZ2)	Plywood; water paint	Dark Green	PANTONE 7738 C
Throwing Zone 3 (TZ3)	Plywood; water paint	Dark Green	PANTONE 7738 C
Fence	Steel; oil paint	Light Blue	PANTONE 2727 C
Border Line between MRA and TZ1	Water paint	Light Blue	PANTONE 2727 C
Border Line between MRA and TZ2	Water paint	Light Blue	PANTONE 2727 C
Border Line between MRA and TZ3	Water paint	Light Blue	PANTONE 2727 C
No Contact Area (NC)	Water paint	Cyan	PANTONE 3315 C
Guide line	Non-shiny vinyl tape	White	PANTONE 663 C
Ring	Steel; oil paint	Light Red/ Light Blue/ Yellow	PANTONE 1785 C PANTONE 2727 C PANTONE 3935 C
Ring Tree	Steel; oil paint	Light Red/ Light Blue/ Yellow	PANTONE 1785 C PANTONE 2727 C PANTONE 3935 C
Golden Cup	See Figure 1.5	Light Red/ Light Blue/ Yellow	PANTONE 1785 C PANTONE 2727 C PANTONE 3935 C

3. Shuttlecock

3.1. Requirement:

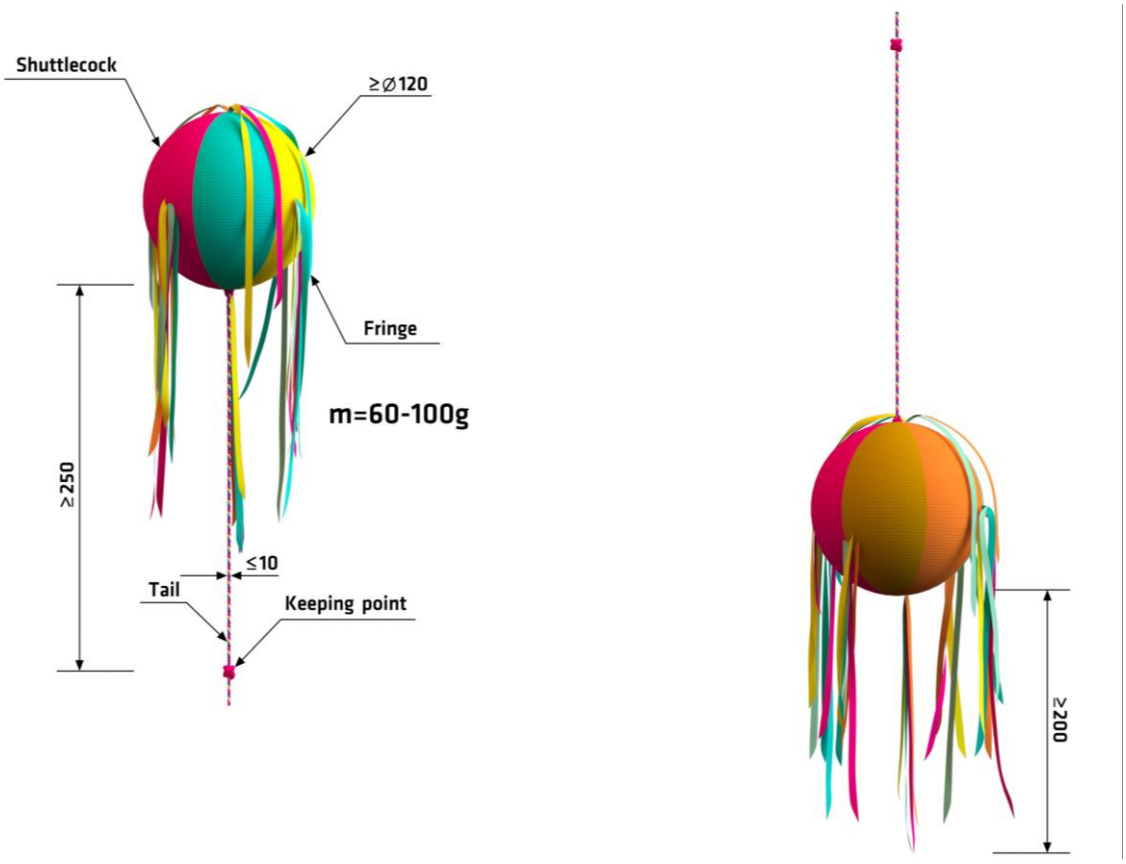
+ Material: soft material (natural fibre, or synthetic fibre);

+ Weight: from 60 to 100 gram including shuttlecock, tail and fringe;

+ Shape: sphere, minimum 120 mm diameter; or other shapes nearly sphere with minimum120 mm dimension when measured from any angles and through the center of shuttlecock. (Figure 3.1.a).

+Tail: Different colours. Maximum thickness 10 mm. Automatic Robot holds the tail from Keeping Point (with distance to Shuttlecock 250mm) or further (Figure 3.1.a).

+ Fringes: Different colours with minimum 3 colours. Minimum 5 Fringes. Fringes are freely attached to different positions on Shuttlecock. The length of Fringes is minimum 200 mm starting from the bottom of Shuttlecock (Figure 3.1.b).



a) Measurement and Weight of Shuttlecock *b) Fringe length*

Figure 3.1. Shuttlecock Requirements

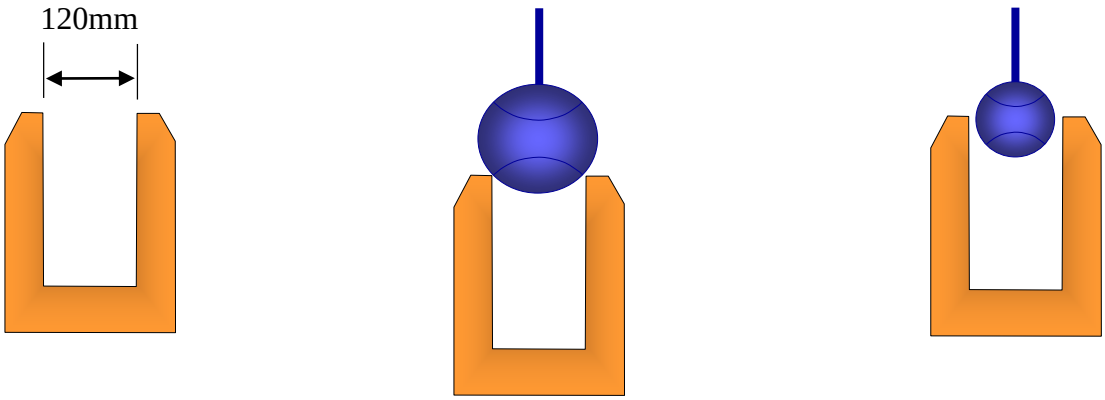
3.2. *Ways to define Shuttlecock measurement*

- *Length of Fringes:*

When keeping the tail to hang the shuttlecock, the length of fringes is 200 mm minimum, starting from the bottom of shuttlecock. (Figure 3.1.b).

- *Measurement of Shuttlecock dimension:*

Using 120 mm wide U ruler to quickly define the dimension of Shuttlecock. (Figure 3.2).



a) U shape Ruler to quickly define Shuttlecock measurrement

b) Shuttlecock dimension meeting requirement

c) Shuttlecock dimension not meeting requirement

Figure 3.2. Checking Shuttlecock dimension

3.3. Shuttlecock Rack *(for reference)*

Besides putting Shuttlecock directly in Loading Area, teams can use Rack to arrange or hang Shuttlecocks. (Figure 3.3).

Maximum measurement of Rack is 2000 mm long x 1000 mm wide x 1000 mm high. When in use, the total dimension of the Shuttlecock racks has to be fit inside the Loading Zone.

Total weight of each robot and rack is not over 25 kg.

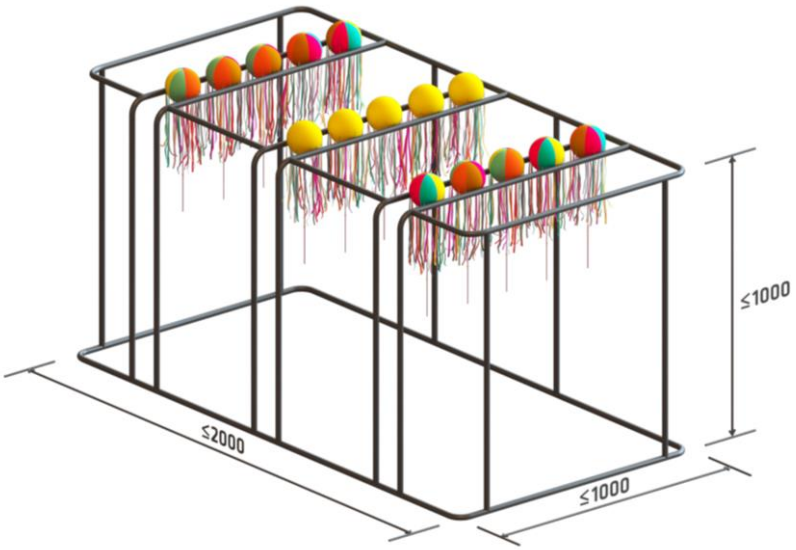


Figure 3.3. Shuttlecock Rack (for reference)