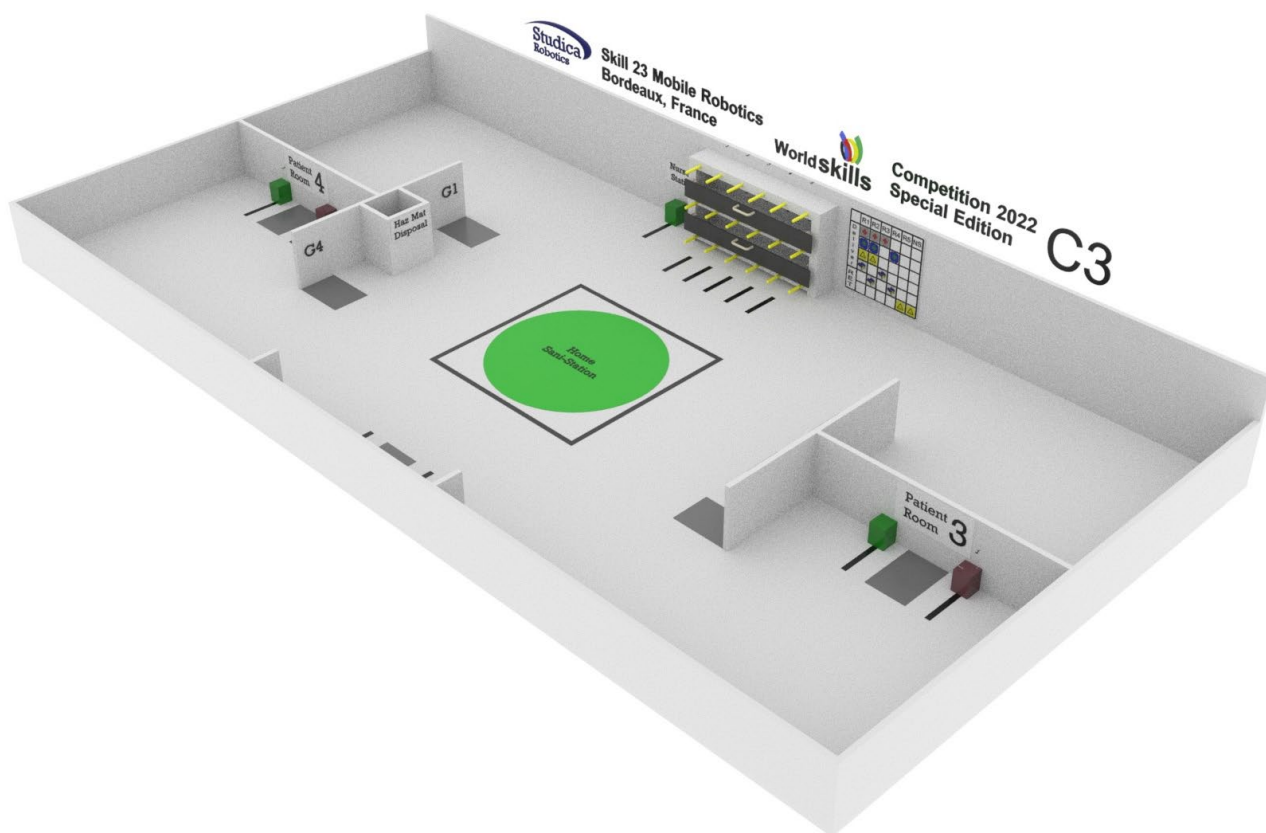


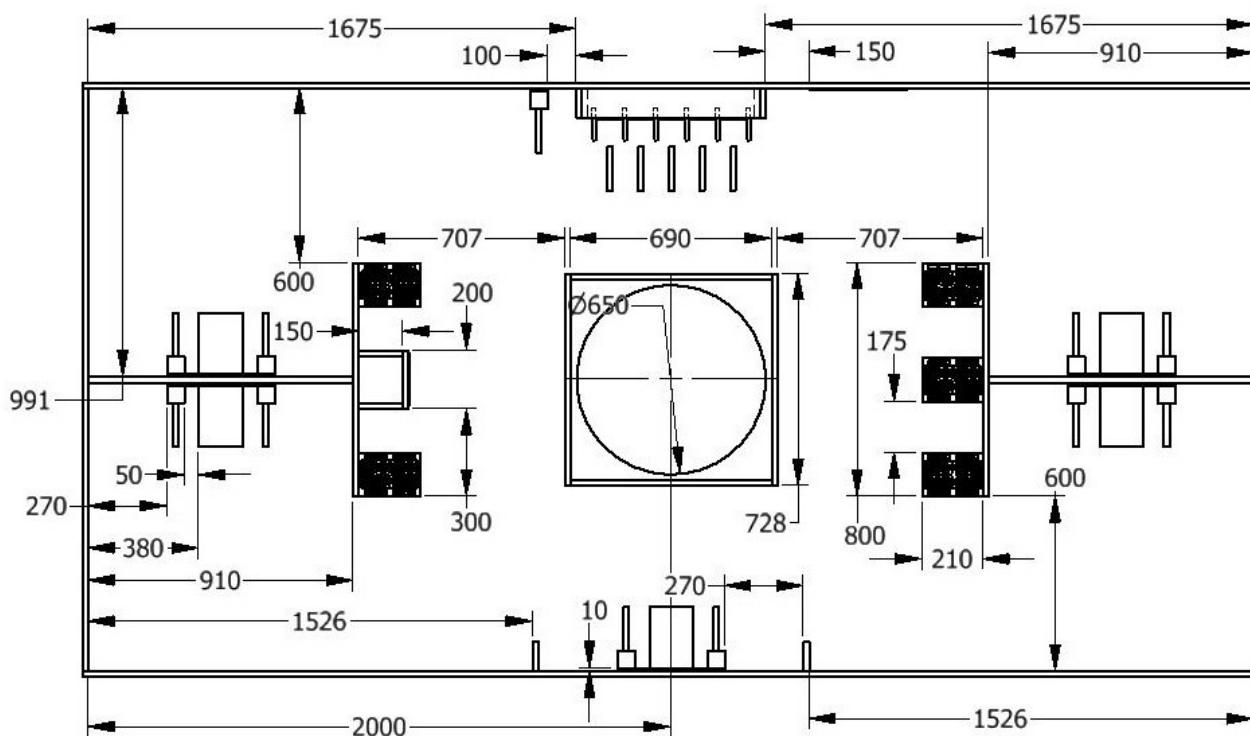
Test Project

Mobile Robotics

Day three – Competitor information



C3 Test Project Performance Environment (Court)



C3 Test Project Performance Environment (Court) Details

C3 includes a CORE Performance Evaluation Element based on managing the Dispensary Cabinet Doors.

	C3 Unknown CORE Element Evaluation	Rating	Mark
1	Unknown CORE Element One Autonomous- Open Door 1	0 OR 1	0.4
2	Unknown CORE Element One Autonomous - Close Door 1	0 OR 1	0.6
3	Unknown CORE Element One Autonomous- Open Door 2	0 OR 1	0.4
4	Unknown CORE Element One Autonomous - Close Door 2	0 OR 1	0.6
5	Unknown CORE Element One Teleoperation- Open Door 1	0 OR 1	0.75
6	Unknown CORE Element One Teleoperation- Close Door 1	0 OR 1	1.25
7	Unknown CORE Element One Teleoperation - Open Door 2	0 OR 1	0.75
8	Unknown CORE Element One Teleoperation - Close Door 2	0 OR 1	1.25
Total			6

The C3 CORE Evaluation Experiences requires Robots to **Open** and **Close** BOTH **Dispensary Cabinet Doors** IN **Autonomous** and **Teleoperation** Control Modes.

Competitors WILL complete the C3 Doors related CORE Evaluation Experiences **when requested by the Experts after ALL C3 Test Project Runs have been completed.**

Cabinet Door Management

Managing the Dispensary **Doors** has a **Mark Value of 0.8** and is set using a **CIS Range from 0 to 4**

CIS Entry

- **0** = 0 Marks Awarded - NO Doors Opened
- **1** = 0.2 Marks Awarded - ONE Door Opened
- **2** = 0.4 Marks Awarded - ONE Door Opened / ONE Closed, or, 2 Doors Opened / NONE Closed
- **3** = 0.6 Marks Awarded - Two Doors Opened / ONE Closed
- **4** = 0.8 Marks Awarded - Two Doors Opened / TWO Closed

The C3 CORE Evaluated Experiences will take place at the end of Competition Day 3 and will require the Robots to Open and Close each Door using both Autonomous and Teleoperation Control Mode.

Robots will receive ALL Test Project Work Orders through the Work Order Board.

Work Order ONE

	R1	R2	R3	R4	R5	NS
D		+	+			
e	+			+		
i						
v						
e						
r						
R						
E						
T						

Work Order TWO

	R1	R2	R3	R4	R5	NS
D	+		+			
e		+		+		
i						
v						
e						
r						
R						
E						
T						

Work Order THREE

	R1	R2	R3	R4	R5	NS
D		+		+		
e	+		+			
i						
v						
e						
r						
R						
E						
T						

	R1	R2	R3	R4	R5	NS
D	+		+			
e		+		+		
i						
v						
e						
r						
R						
E						
T						

Work Order FOUR

	R1	R2	R3	R4	R5	NS
D		+		+		
e	+		+			
i						
v						
e						
r						
R						
E						
T						

Work Order FIVE

	R1	R2	R3	R4	R5	NS
D	+		+			
e		+		+		
i						
v						
e						
r						
R						
E						
T						

Work Order SIX

Work Order Selection

- A set of SIX Work Order Board Patterns will be at the courts.
- AFTER ALL Competitors at the SIX Courts have their Robots in position and ready to start the Evaluated Test Project Run a Die will be rolled to identify the Work Order Pattern that will be used in the Evaluated Test Project Run
- The COMPETITORS will set the Work Order Plates in position on the Work Order Board
- The Competitors and the Experts Supervising each court MUST Agree that the Work Order Board is setup correctly BEFORE the Evaluated Test Project Run can start.

NOTE: The Work Orders displayed in the picture above are ONLY SAMPLES and Will NOT be used to set any Evaluated Test Project Runs.

	R1	R2	R3	R4	R5	NS
D		+	+			
e	+			+		
i						
v						
e						
r						
R						
E						
T						

- The Robot must 'Read' the Work Order Board to determine the specific Medicine Cubes, HazMat Cubes and Gurneys the Robot must manage.
- White Cubes are identified on the First Row of the WOB and are positioned on the Dispensary Cabinet's Bottom Shelf
- Blue Cubes are identified on the Second Row of the WOB and are positioned on the Dispensary Cabinet's Middle Shelf
- HazMat Cubes and Gurneys requiring Delivery to Patient Rooms are identified on Rows Three and Four of the WOB.
- HazMat Cubes and Gurneys requiring Retrieval from Patient Rooms are identified on Rows Five and Six of the WOB.
- There are NO Restrictions regarding how many times a Robot returns to the Dispensary and 'Reads the WOB'

Comparing Individual Task Elements:

- Multiple Sets of Work Order Tasks are considered to be of EQUAL difficulty.
- Retrieving a Cube from the Bottom, Middle or Top Dispensary Cabinet Shelves are EQUAL Tasks.
- Delivering a Gurney TO / OR Retrieving a Gurney from Patient Rooms 1, 2, 3 or 4 are EQUAL Tasks.
- Delivering a Gurney TO / OR Retrieving a Gurney from Patient Room 5 are EQUAL Tasks
- Delivering a Cube of ANY Color to Patient Rooms 1 or 2 are EQUAL Tasks
- Delivering a Cube of ANY Color to Patient Rooms 3 or 4 are EQUAL Tasks
- Delivering a Cube of ANY Color to Patient Room 5 are EQUAL Tasks
- Retrieving a HazMat Cube from the Nurse's Station or from Patient Room 5 and Delivering it to the HazMat Bin are EQUAL Tasks
- Retrieving a HazMat Cube from Patient Rooms 1, 2, 3 or 4 and Delivering it to the HazMat Bin are EQUAL Tasks

Restrictions

- The Hospital has a Very Strict Policy regarding Robot's Management of Contaminated HazMat Cubes.
- AFTER a Robot has been In Possession of a Contaminated HazMat Cube it MUST Complete the Sanitation Process at the Sanitation Station BEFORE it comes into CONTACT with a Medicine or Clean HazMat Cube or a Gurney.
- IF a Robot is Observed Breaking this policy then their Evaluated Test Project Run will be Terminated Immediately. Competitors WILL be awarded ALL Marks earned by their Robot prior to being Dis-qualified.
- After a Robot has been In Possession of a Contaminated HazMat Cube it MAY proceed to taking possession of another Contaminated HazMat Cube WITHOUT completing the Sanitation Process.
- Sanitation Process Completion Marks will ONLY be AWARDED for the Sanitation Process completed as the Final Performance Element of a C3 Evaluated Test Project Run.
- IF the Strategy Implemented by Competitors requires the Sanitation Process to be completed additional times NO MARKS will be awarded for these additional executions of the Sanitation Process.
- Gurneys CANNOT be used to transport Cubes of any type

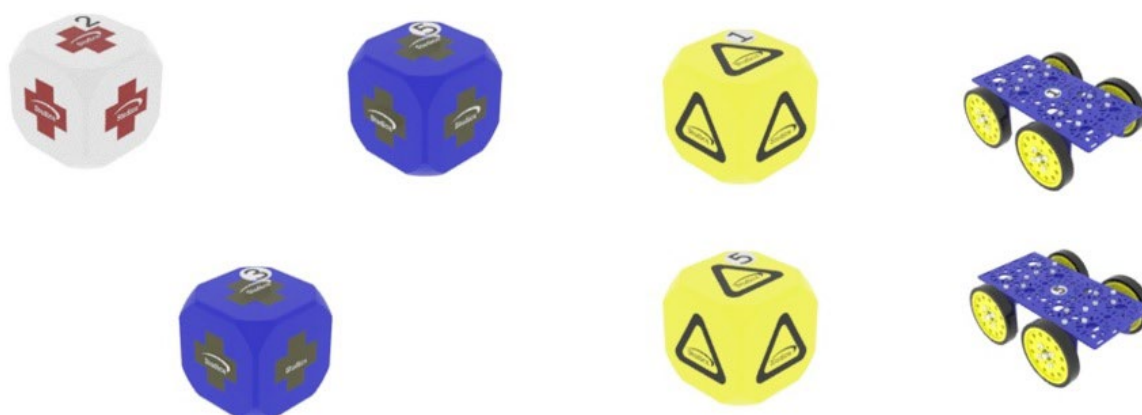
Patient Room Support Robot Evaluated Test Project Run Round One



Round One will involve managing 1 White and 1 Blue Medicine Cubes, 1 HazMat Cube and 1 Gurney.

C3 EVALUATION ROUND ONE		RANGE	MARK
1	Medicine Cube One Management	0 to 2	0.40
2	Medicine Cube Two Management	0 to 2	0.40
3	HazMat Cube Management	0 to 2	0.60
4	Gurney Management	0 to 2	0.80
5	Robot Sanitation	0 or 1	0.30
6	Unknown Inadvance Element One	0 to 2	0.40
7	Unknown Inadvance Element Two	0 to 2	0.40
8	Time: (Fastest Team Time/Team Time) X 1.0	0 to 600	1.00
		Total	4.30

Patient Room Support Robot Evaluated Test Project Run Round Two



Round Two will involve managing three Medicine Cubes (at least 1 of each color), two HazMat Cubes and two Gurneys.

C3 EVALUATION ROUND TWO		RANGE	MARK
1	Medicine Cube One Management	0 to 2	0.40
2	Medicine Cube Two Management	0 to 2	0.40
3	Medicine Cube Three Management	0 to 2	0.40
4	HazMat Cube One Management	0 to 2	0.60
5	HazMat Cube Two Management	0 to 2	0.60
6	Gurney One Management	0 to 2	0.80
7	Gurney Two Management	0 to 2	0.80
8	Robot Sanitation	0 or 1	0.30
9	Unknown Inadvance Element One	0 to 2	0.40
10	Unknown Inadvance Element Two	0 to 2	0.40
11	Time: (Fastest Team Time / Team Time) X 1.0	0 to 600	1.00
		Total	6.10

Patient Room Support Robot Evaluated Test Project Run Round Three



Round Three will involve managing four Medicine Cubes (at least 1 of each color), three HazMat Cubes and 2 Gurneys.

C3 EVALUATION ROUND THREE		RANGE	MARK
1	Medicine Cube One Management	0 to 2	0.40
2	Medicine Cube Two Management	0 to 2	0.40
3	Medicine Cube Three Management	0 to 2	0.40
4	Medicine Cube Four Management	0 to 2	0.40
5	HazMat Cube One Management	0 to 2	0.60
6	HazMat Cube Two Management	0 to 2	0.60
7	HazMat Cube Three Management	0 to 2	0.60
8	Gurney One Management	0 to 2	0.80
9	Gurney Two Management	0 to 2	0.80
10	Robot Sanitation	0 or 1	0.30
11	Unknown Inadvance Element One and Two	0 to 4	0.80
12	Time: (Fastest Team Time / Team Time) X 1.0	0 to 600	1.00
		Total	7.10