Information Packet

"Liberty Science Center"
FIRST Tech Challenge Qualification Tournament

January 9, 2016
8:00 AM to 5:00 PM

Liberty State Park
222 Jersey City Blvd
Jersey City, NJ 07305

Welcome to the 5th Annual "Liberty Science Center NJ FTC Qualification Tournament.

We would like to thank our host teams, Jdroids (#7026) and Metal Marauders (#6337), as well as the staff and administration of the Liberty Science Center.

You will see that this is an amazing venue. The Liberty Science Center is being very accommodating and supportive relative to space, A/V equipment, judging rooms, etc. We thank them profusely.

Let this be the first of many THANK YOU's to our many great volunteers, including the team members and supporters from our host teams, along with the many, many other volunteers who have been amazing all season long. Thanks for your help!
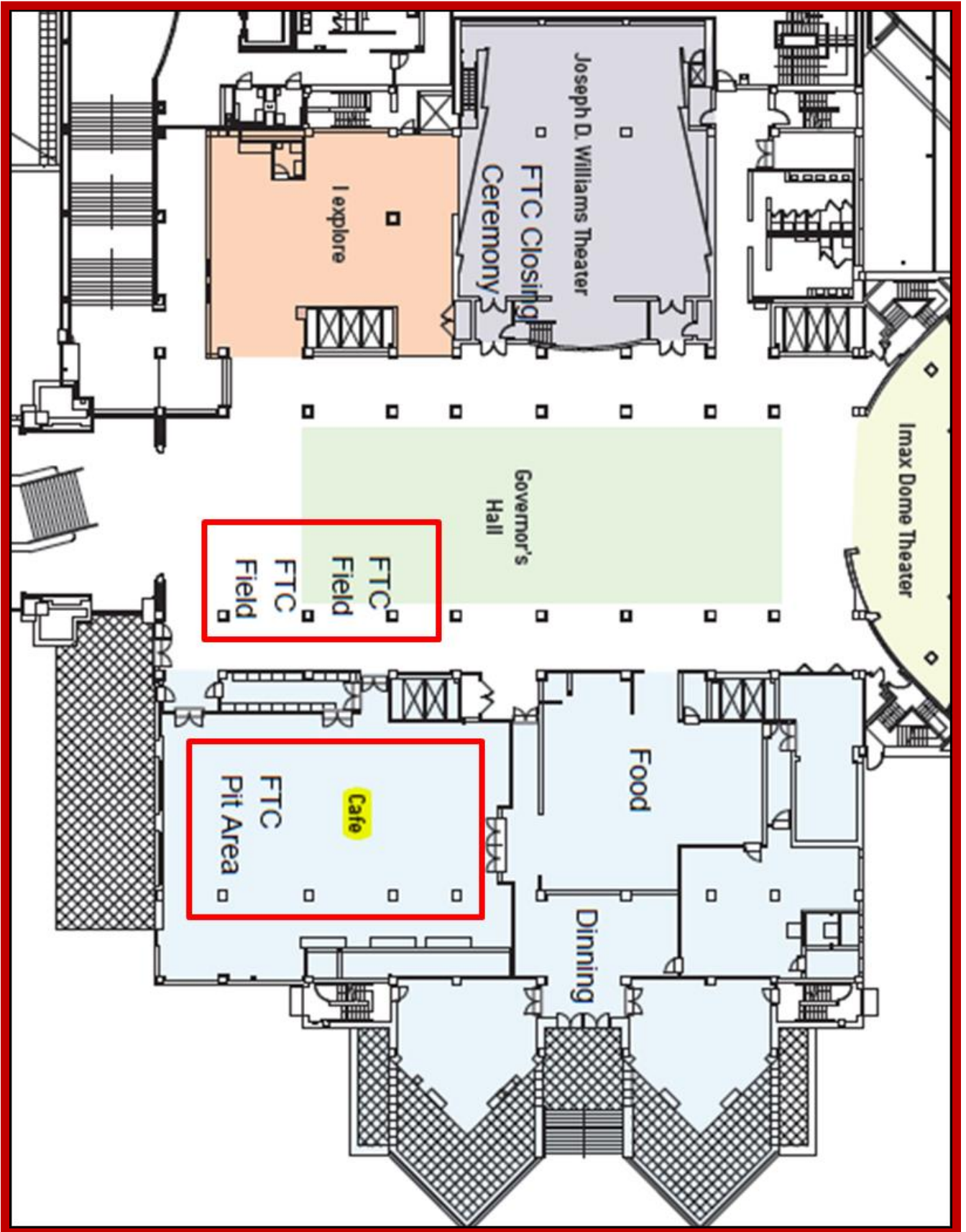
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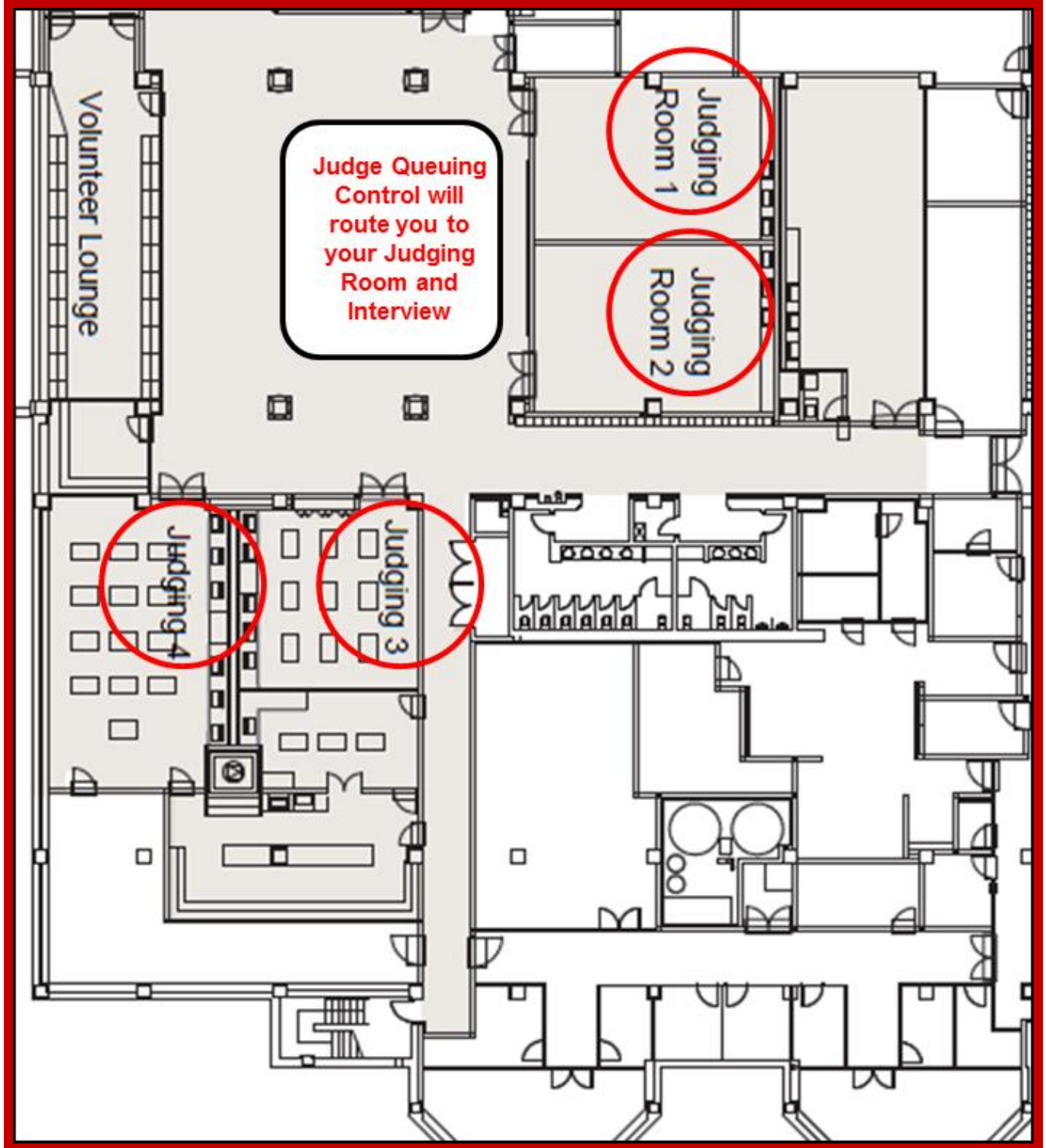
"Liberty Science Center" Qualifier
January 9, 2016

7:00 - 7:30	**Arrival Time for Volunteers**
7:30	**All Volunteers On Site** **Teams Needing Extra Help**
8:00	**Inspection Stations Open** **(Hdw & Sfw Insp Begins)**
8:15	**Welcome to Teams** **Description of Day's Logistics**
8:30	**Judged Interviews Begin**
8:45	**Practice Time on Field for Teams** **that have Passed BOTH Inspections**
9:15	**Reset Crew & Field Crew Briefing**
10:15	**Drivers Mtg** **(when Judging is Complete)**
10:30	**Opening Ceremony, followed by …** **30 Qualifying Rounds, Total** **(~24 Teams: 5 Matches Each)** **[180 Minutes @ 6 Minute Cycle Time]**
	Complete ~15 of 30 Rounds
12:15	**Lunch**
1:00	**Finish Qualifying Rounds (~15 Rounds)** **[90 Minutes]**
3:00	**Alliance Selection**
3:15	**Start SEMI-FINALS** **6 Matches Yield 2 Alliances from 4** **[48 Minutes]**
4:00	**Start FINALS** **3 Matches Used to Yield the Winning Alliance** **[24 Minutes]**
4:30	**Complete FINALS** **(2 Alliances - One Winning, One FInalist)**
4:45	**Closing Ceremonies**
5:00	**Event Complete**

Competition Area (2nd Floor)

Judging Area (1st Floor)

EVENT INFORMATION - Arrival

Directions: 222 Jersey City Blvd, Jersey City, NJ 07305. Directions are available on the Liberty Science Center website at LSC.org.

Parking: Based upon last year's event, Parking is $7.00 for each car and $10.00 for each bus. The parking lot is owned by the State of New Jersey and is operated by Central Parking. Please note that LSC does not control the operation of the lot nor could they waive the parking for any volunteers or attendees.

Venue Entry: Every guest who visits LSC is subject to a security screening upon entering the building. Please use discretion when determining what to bring to the event. If you have any questions about what is acceptable to bring feel free to contact Stuart Neal at sneal@lsc.org.

Admission Policy (Teams): On January 9, 2016, Liberty Science Center will operate as normal with the added bonus of the FTC Qualifying event. This event will be open to the public from 9 AM to 5:30 PM. Every person participating in the event will be required to have a wrist band. Each team will receive up to 10 free passes for team members and 2 free passes for adult mentors/coaches. Based on the number of students and coaches checked-in in the morning, each team will be given that same number of wrist bands as free passes.

Admission Policy (Other FTC Guests): Any additional people attending the event will be required to purchase a ticket at the box office upon arrival. The normal Exhibition tickets are $21.75 for adults and $17.75 for students. Once again, LSC is graciously extending a discount to FIRST supporters (adults & students). Such guests should be sure to mention the FIRST robotics event and Discount Code D022.

Arrival: It is critical that all teams arrive on-time (by 8:00 AM) and report to Team Registration immediately upon arrival. Only two representatives should report to Team Registration. The rest of the team should go directly to 2nd floor Cafe to setup your pit table, and prepare for Inspection and Interviews.

Consent Forms: Similar to other NJ FTC events this year, teams should utilize the on-line system, STIMS (Student Team Member Summary) rather hard-copy Consent Forms for each member. Bring the Summary Report from STMS to Check-In. Adult mentors and coaches are now able to use STIMS as well.

Engineering Notebook: Do not take your Engineering Book to Team Check-In. Instead, your team should carry it with them to the Judged Interview.

Judging Time: Each team has been pre-assigned an Judged Interview time. Please see the final page of this Information Packet for your appointment time.

Late Arrival: Call 862-432-1526 if you are going to be late. We will begin creating the Match List once most teams have passed Inspection so that it is available by Opening Ceremony. We will not delay creation of the Match List for MIA teams. Once it is run, it is may not be changed

EVENT INFORMATION – Areas, Materials and Food

Overall Schedule: The day's timing will be in keeping with most competitions this year. Teams are asked to arrive by 8am at the very latest and we will open Team Registration as early as 7:30 for the teams that can make it to LSC by then. The day ends around 4:00pm and a 45 minute lunch period is planned..

Pit Area: On the 2nd floor, directly next to Governors Hall, there is large cafeteria at the Liberty Science Center which will serve as our Pit Area. Your team number will be affixed to the table that has been assigned to you. Space is limited in the pit area.

Please stay within the boundaries of your pit and be kind to your neighbors. If you have large banners, displays, or posters, we can find a space somewhere else in the arena for these items. Taping or pinning any posters or banners on the walls are not permitted. The Pit Areas should stay clear of obstructions to traffic and sight lines to the field. If you are having an issue, please see an event manager or crew member for immediate assistance.

What to Bring …

For the Pits and Field: **SAFETY GLASSES for your participants is a top priority. We will expect teams to wear this important safety item.** Also, remember to bring a multi-outlet utility strip to assure that you can bring power to a convenient spot on your Pit table. As usual, it is also good to bring spare batteries and other critical parts, as well as a battery charger. It is always smart to mark you materials with your team number so that they don't get mixed with those of another team.

For Judging: Bring your Engineering Notebook. Note: Your Control Award Application (if pursuing it) should be dropped off at Team Check-In upon arrival. Some other recommendations are: your robot, any props to show the robot's capability, charged-batteries and loaded program if demonstrating, and poster board or tri-fold is welcome if you wish.

Food: The event will have food available for purchase during the day and at lunch time, of course. Please have team members bring some pocket money. Lunch will be available for purchase from LSC, as opposed to our usual pizza/sub arrangements. Students should bring $7 - $10 for lunch. Food can be eaten in the Pit area, but NO FOOD is allowed in the Competition seating area.

Outside food and drinks cannot be brought in or delivered to the Center.

Safety : All team members and their guests are expected to behave in a safe manner and obey all safety rules. Individuals not acting safely will be asked to leave the event premises. Please notify an Event Crew member if you have any safety issues or concerns. Please report any illness or injuries to the Pit Admin table or event organizers.

EVENT INFORMATION – Inspection & Competition Fields

Inspection: Bring your robot to Inspection <u>immediately</u> upon arrival. Robots must pass the hardware and software inspection before they can participate on the practice field and in the competition.

> **Field (Software) Inspection**: Each team has an Appointment time for Software Inspection. See page 10 of this Packet. Other than your Judged Interview Appointment time, there should be no other top priority for your team than passing Field Inspection. Teams may report to Inspection prior to their Appointment to be serviced if there's no line at that time.

> **For Robot (Hardware) Inspection**: Hardware Inspection is performed in the Pit Area on a first come, first served basis. Work it in asap around your Judged Interview and Field Inspection appointments. There is no requirement for a Bill of Materials this year.

Practice Area: Teams who have passed all inspections may be able to utilize the Practice Field in the Pit Area. Please share and demonstrate Gracious Professionalism.

Competition Area: Two fields will located in Governors Hall within the Liberty Science Center. Spectators are welcome, however, it is asked the people use the seats and do not crowd the field area. Otherwise, the view of others will be obstructed

> When queued for a match, please report to the Queuing Area near the fields. We expect to have a table there, where your robot can be set. From there, a Queuer will take your Drive Team to the playing field at the appropriate time.

> In order to finish on schedule, including 5 qualification matches for all 24 teams, it is important that the direction of Queuers be followed. If, for any reason, your robot is not ready when queued, a <u>team must send a representative to the field</u>.

Queuing Areas will be marked just outside the Pit Area door.

Volunteers: As is our usual practice, we may be asking each team if they can provide a volunteer for the day. Support is appreciated.

JUDGED AWARDS, ALLIANCES, ADVANCEMENT CRITERIA

Judged Awards: The full set of awards will be given out at the January 9th Qualifier. We will have 4 panels of Judges. See Page 10 of this Information Packet for your Judged Interview time. Your team may also be given a Reminder Card at Check-In.

We plan to accomplish ALL of the judged interviews BEFORE the start of Qualification Matches. It is important that teams arrive by 8:00 … and really abide by the interview time that they are given. Judged Interview Time takes priority over Inspection.

Note – The interviews are being conducted one floor down from Governors Hall. Be aware of the Judging Room to which you have been assigned and look for the wall signs. Escorts will help people move quickly to their interview. Maintaining schedule is vital.

Alliance Selection: Under the assumption that all 24 teams participate , we will be following FIRST rules regarding 3-team Alliances. Following the completion of Qualification Matches, we'll form four Alliances to participate in the Elimination Matches.

Alliance Rules: Several teams have asked if "NJ Scrimmage Rules" apply (i.e., Alliance Captains cannot pick amongst themselves). NJ Scrimmage-Mentoring Rules DO NOT apply. Alliance Captains are free to pick amongst themselves. All other official FIRST tournament rules, such as declining an alliance, apply as well.

Qualifying for the NJ FTC Championship: Here are the guidelines for earning an invitation to the NJ FTC Championship Tournament. Assuming that the January 3rd tournament size is 24 teams, there are 5 invitations being awarded. We will work our way down the partial list, below, until 5 advancing teams are identified.

1. Inspire Award Winner
2. Winning Alliance Captain
3. Inspire Award 2nd place
4. Winning Alliance 1st Partner
5. Inspire Award 3rd place
6. Winning Alliance 2nd Partner
7. Think Award Winner
8. Finalist Alliance Captain
9. Connect Award Winner ….

Gracious Professionalism: Fun is the rule for the day. Please act in accordance with the guidelines of Gracious Professionalism. Ungracious behavior directed at referees or event volunteers will not be tolerated and will be grounds for disqualification from the event. Be kind to your referees, fellow teams, and help them as needed.

24 Competing Teams

	Team Number	Team Name
1	251	Mechalodons
2	3774	Hive Voltage
3	3983	Highlands Undefined
4	4086	Oratory Prep 2
5	4890	Hive Voltage 2.0
6	4936	Sparks Robotics
7	5212	Megahertz!
8	5354	Oratory Prep 1
9	5398	Robotux
10	6337	Metal Marauders
11	6613	Yaliens
12	7040	CyberFalcons
13	7251	Comets
14	7959	Columbia Cougar Cubs
15	7994	HCST 7994
16	8812	CyberRaptors
17	9554	HCST 9554
18	9848	Mechanical Pioneers
19	9889	Cruise Control
20	9891	Team Titanium
21	9951	Matrix Robotics Club
22	10300	Robo-Dragons
23	10626	PCTI-2
24	10669	McNair HS JC

Pre-Assigned Team Appointments
for Judging Interviews and Field Inspection

Judged Interview Appt	Judge Room / Panel	Team Number	Team Name	Field Inspection Appt
8:30	1	251	Mechalodons	9:00
8:45	1	4890	Hive Voltage 2.0	9:15
9:00	1	5398	Robotux	9:30
9:15	1	7251	Comets	8:15
9:30	1	9554	HCST 9554	8:30
9:45	1	9891	Team Titanium	8:45
8:30	2	3774	Hive Voltage	9:00
8:45	2	4936	Sparks Robotics	9:15
9:00	2	6337	Metal Marauders	9:30
9:15	2	7959	Columbia Cougar Cubs	8:15
9:30	2	*10669*	*McNair HS JC*	8:30
9:45	2	9951	Matrix Robotics Club	8:45
8:30	3	3983	Highlands Undefined	9:00
8:45	3	5212	Megahertz!	9:15
9:00	3	6613	Yaliens	9:30
9:15	3	7994	HCST 7994	8:15
9:30	3	9848	Mechanical Pioneers	8:30
9:45	3	10300	Robo-Dragons	8:45
8:30	4	4086	Oratory Prep 2	9:00
8:45	4	5354	Oratory Prep 1	9:15
9:00	4	7040	CyberFalcons	9:30
9:15	4	8812	CyberRaptors	8:15
9:30	4	9889	Cruise Control	8:30
9:45	4	10626	PCTI-2	8:45

ROBOT COMMUNICATION TIPS

As you know this is the first year for the new Android Control System. Students, robots, and events were new to this, but …. we've done a lot of training this summer and we've had thirteen competitions already this year. Below are some tips and reminders about reducing problems on event day.

Teams that have taken special care in the mounting of their phone, dressing their cables with stress relief and other tips have done the best this year. Here are top 5 Tips from a recent FTA Telecon.

TIP #1 - Based on nationwide input, getting the cabling and mounting right is the #1 action that can best assure your successful day. Refer to examples for proper strain relief. Have your team verify things prior to the big event.

> TE>>>> here is an example of the a piece of tape and a zip tie that does a really good job of securing the Mini Type B side of a USB cable:
> https://drive.google.com/open?id=0B0z7bZfPuXgQeIFEMGgyNHliM0k
>
> TE>>>> here is a phone that has a 90 degree USB OTG adapter connected and uses a rubber band to secure the connector to the phone:
> https://drive.google.com/open?id=0B0z7bZfPuXgQcnc3MnB3ZmprbGs
>
> TE>>>> here is a module that has the standard USB cable replaced with a 90 degree cable and uses a rubber band to secure the cable from vibrations:
> https://drive.google.com/open?id=0B0z7bZfPuXgQLXVyQTB1WXV3b0E
>
> TE>>>> here are some examples of 3d printed devices designed to help secure the phone, modules and cables. Note that in one picture we use rubber bands to hold the connector tip to the phone so that we can easily remove the cable and phone if needed (for charging or programming purposes). The orthodontic rubber bands do a good job of holding the cable and connector in place while being easy to remove.
> https://drive.google.com/open?id=0B0z7bZfPuXgQNnNxZHhtWkp0bWs
> https://drive.google.com/open?id=0B0z7bZfPuXgQZjNSLXpMMXkyaFU
> https://drive.google.com/open?id=0B0z7bZfPuXgQcjEzekNINnByUDg
> https://drive.google.com/open?id=0B0z7bZfPuXgQZUlSOTNvejMwVkk

TIP #2 - The Second Tip is to simply turn your robot off for 35 seconds if your encounter a Scan Issue (capacitor problem). This can sometimes occur and is addressed most easily by an alert Drive Team at the Queuing Table and when stepping into the Drivers Box.

TIP #3 - The Third most important Tip to avoid problems is to properly follow the phone naming convention as spelled out in Robot Rule <RS02> Check it. Naming convention errors have been the third most frequent cause of problems for teams.

TIP #4 - The Fourth Tip (which can also be addressed preemptively) is to make sure that version of apps match. The 4th most frequent challenge for teams has been versions of apps not matching / not newest SDK. The solution is to upgrade, or at minimum make them match

TIP #5 - Lastly, the Fifth most frequent issue is Androids connecting to other networks (using remembered groups). At the competition venue we'll work hard with our participants to remove all old networks and shut off anything not in use, especially Bluetooth. All can help with this. Tell your team members, your mentors, and your guests.

> Lesser but still notable TIPs:
>
> Both apps on 1 phone OR apps not intended for robotics on the phone.
> >   Solution - Uninstall other apps
>
> Hardware not associated with app properly / app not set as default
> >   Solution - Clear cache of app, and make sure to hit the check-box when scanning for hardware
>
> Phone USB in funky state (mainly driver station). Happens more rarely
> >   Solution -Without going into detail, simply need to reboot the phone
>
> Programming errors
> >   Solution - Mainly teams causing non-interruptible infinite loops. Programmer must address.