

FIRST[®]

DIVESM

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Agenda





- Welcome
 - Season Schedule – <https://www.firstindianarobotics.org/ftc/events/>
- Event Selection
 - Same process as last season, 3 rounds
 - Early October – will finalize dates and send out info soon.
- Indiana Team Updates
 - You can find them on our [blog](#).
 - Pro tip: Have team members subscribe to the blog and update you with any important information.



Agenda

- Technology Updates – Danny
 - Avatars
 - Upcoming Software Updates
- Understanding Game Rules and Working Together – Erin/Liz
 - Know where to look for answers & Look things up together
 - Top 3-5 misunderstood rules
 - Playoff Change
- Judging Updates – JoAnn
 - Gracious Professionalism in Judging
 - Portfolio Not Required for All Awards

Congratulations on a Successful Kickoff!

- Thanks to all of our kickoff hosts!
- Here are the links to the Kickoff videos on YouTube:
 -  [Kickoff Broadcast](#)
 -  [Game Animation](#)
 -  [Field Tour](#)
 -  [Gracious Professionalism](#)

Technology Updates

Danny Diaz

Elizabeth Gilbert

Craig MacFarlane

Software Development Kit (SDK) Updates

- FTC SDK 10.0 Released on Kickoff
 - New device support (see release notes)
 - REV Servo Hub (shipping October?)
 - LimeLight 3A (\$189)
 - Introduced to allow limited-code vision
 - Supports TensorFlow, Google Teachable Machines
 - REV External 9-Axis IMU (ESD resistant)
 - Sparkfun Qwiic LED stick
 - Maxbotix Maxsonar I2CXL sonar rangefinder
 - Updated AprilTags, programming samples, **BUG FIXES**, and MORE!
 - AprilTag field localization, know where you are by looking at a Tag!



Software Development Kit (SDK) Updates

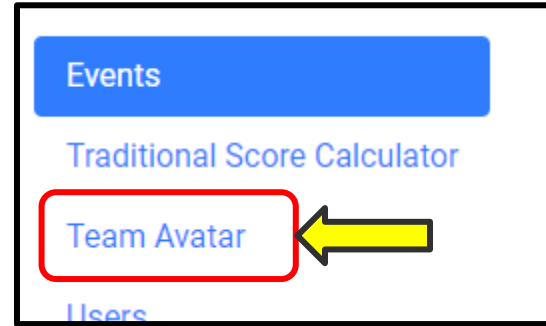
- FTC SDK **10.1** coming soon (October 1 target)
 - Color Blob Detection API
 - Detect game pieces on field with a simple webcam.
 - Supports all languages, even Blocks.
 - Full documentation to be on ftc-docs.
 - Uses OpenCV without writing pipelines.
 - Additional native device support
 - More Bug Fixes







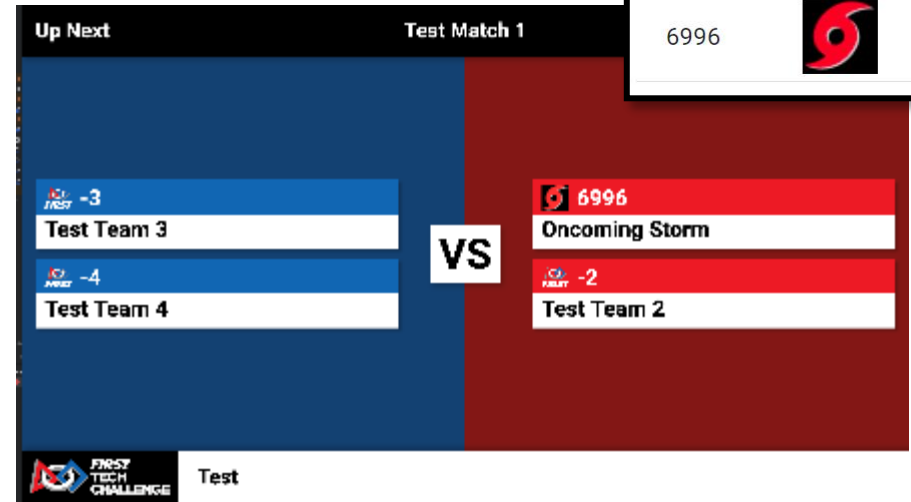
Example looking for Blue SAMPLES within the white region of interest (orange outline)

Team Avatars

- New to *FIRST* Tech Challenge!
- Similar to FRC Avatars
 - 40 x 40 pixels
- System is currently LIVE
- Lead Coach Mentor 1 or 2
 - Via ftc-scoring.firstinspires.org
- Blog releasing next week!

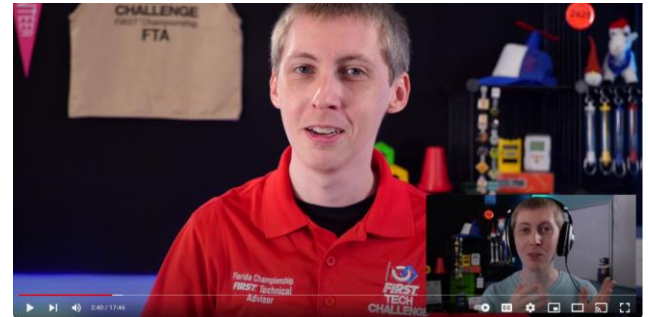
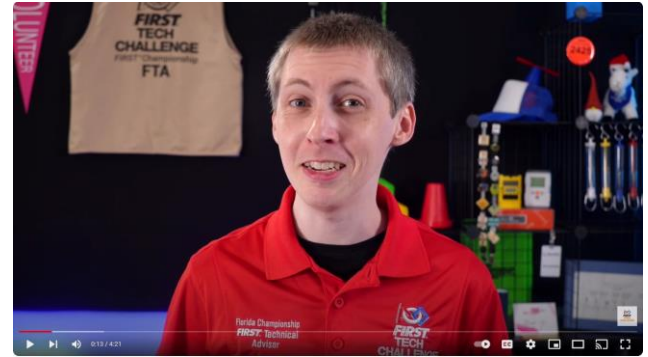


Team	Avatar
25959	
23350	
14825	
6996	



Tech Updates Video

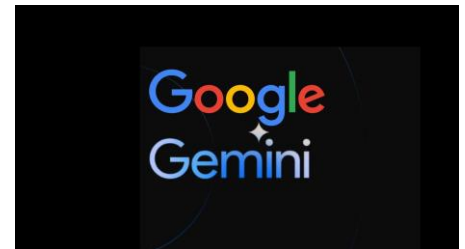
- AJ Foster (volunteer, Florida) worked with FTC to create a Tech Update video. Hosted on FTC's YouTube channel.
 - <https://youtu.be/SkN0I6X0y9I?si=794050LFLKUKk9AE>
 - GREAT video with tech-specific updates teams need to know!
- Produced an extended-cut "annotated" video with additional commentary on his own channel. Well worth watching.
 - https://youtu.be/rkpunNls07k?si=4ydWJqwwTe_LMLdK



AI Innovation Corner (ftc-docs)

Google is working with *FIRST* Tech Challenge to help us increase participation in underserved areas and to incorporate Generative AI into the program

- We will be developing articles discussing Generative AI topics, and potentially also tools for teams to use.
- We will be documenting examples of using Generative AI in *FIRST* Tech Challenge (next week is creating a "Game Manual AI" to ask game manual related questions to).
- We will be adding these documents to ftc-docs and announcing them via the Team Blast (we can also cross-post on the PDP blast too).



Competition Rules

Erin and Liz

Modeling Best Practices for Rules Questions

- Model the behavior you we want all our teams and volunteers to follow when they have a question
- We don't expect you to know all the answers. Use the Competition Manual as a resource to point to “show your work”.
- Work with the person asking the question to look-up where to find the answers
- Cite the specific rule in your answer and include anything you think might be unclear or not definitive in that rule when you answer

Breakdown of Competition Manual

10	Game Details.....	
10.1	MATCH Overview.....	
10.2	DRIVE TEAM.....	
10.3	Setup.....	} Setting up the FIELD, and DIVE TEAMS
10.3.1	SCORING ELEMENTS.....	
10.3.2	DRIVE TEAMS.....	
10.3.3	OPERATOR CONSOLES	
10.3.4	ROBOTS	
10.4	MATCH Periods	
10.5	Scoring.....	} Conditions where ROBOTS or ELEMENTS are considered scored
10.5.1	SAMPLE Scoring Criteria	
10.5.2	SPECIMEN Scoring Criteria	
10.5.3	ROBOT Scoring Criteria	
10.5.4	Point Values	
10.6	Violations	

- This section is intended to walk through setting up the field and the players to prepare for the MATCH.
- It describes the conditions in which elements are scored, and when robots can earn points for achievements.
- Not “rule” driven, as these are descriptions/process. There is no penalty, for example, for a ROBOT not completing an ASCENT.

Breakdown of Competition Manual

11	Game Rules (G).....	} Safety and DRIVE TEAM conduct
11.1	Personal Safety.....	
11.2	Conduct.....	
11.3	Pre-MATCH.....	} This are the in MATCH, game specific rule breakdown
11.4	In-MATCH.....	
11.4.1	AUTO.....	
11.4.2	TELEOP.....	
11.4.3	SCORING ELEMENT.....	
11.4.4	ROBOT.....	
11.4.5	Opponent Interaction.....	
11.4.6	Human.....	
11.5	Post-MATCH.....	

Think “in MATCH” rules.
Rule driven section. This covers the important Do’s and Don’ts of MATCH play and conduct prior to MATCH start.

- Pre-MATCH - Show up to MATCHES on time
- SCORING ELEMENT – how many can I carry?
- ROBOT – no tipping, pinning, ZONE protections

Commonly Misunderstood Rules (Observed from Kickoff)

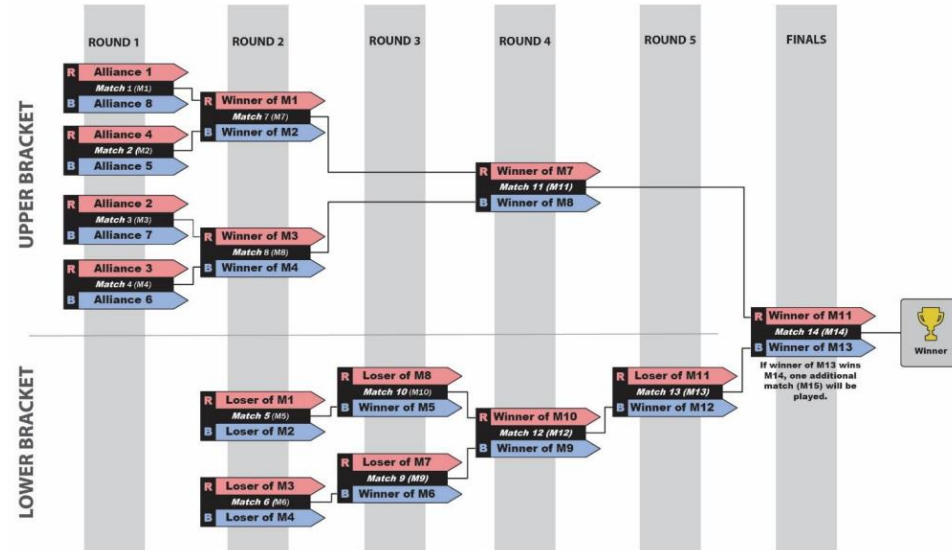
Expect Q&A to help clarify or reenforce these, but we all also need to make sure we're not adding to the confusion. Model good rules answering by citing the rules you are using when you help a team.

1. Possession Limits – Section 11.4.3, G410
2. Pre-Load – Section 10.3.1
3. Human Players in AUTO – Section 11.4.6, Rule G431
4. Robot Ascent Criteria – Section 10.5.3
 - Can a ROBOT “jump” to the HIGH RUNG?
 - Are no points earned if a ROBOT contacts the HIGH RUNG at any time?

Playoff Changes

- **Double Elimination Style Bracket**
 - Alliances start in the upper bracket
 - Alliances advance through playoffs until they lose two matches.
- **Why change?**
 - Increase playoff participation
 - More “fair” – multiple opponents
 - Predictable schedules – all matches played
- **Terminology changes**
 - Elimination → Playoffs
 - Semi-finals → Rounds

Figure 13-6: 8-ALLIANCE playoff bracket



Double Elimination Tournament Bracket

- Full details in **Tournament Section 13** of Competition Manual
- Alliances based on total playoff eligible teams
 - Scaling is now done with number of alliances NOT number of teams on an alliance
- Awards between matches
 - Time efficient way to run event

Table 13-2: Number of playoff ALLIANCES based on total playoff eligible teams

Total playoff eligible teams	Number of playoff ALLIANCES formed
4-10 Teams	2
11-20 Teams	4
21-40 Teams	6
41-64 Teams	8

Table 13-5: 6-ALLIANCE playoff bracket typical timing

Round	MATCH	Upper/Lower	FIELD	Blue	Red	Gap (min)		Next MATCH (MATCH # (ALLIANCE color))		Winner	Loser	Estimated Start (min)
						Blue	Red					
1	1	Upper	1	A5	A4					M3 (B)	M6 (B)	0
	2	Upper	2	A6	A3					M4 (B)	M5 (B)	6
2	3	Upper	1	W1	A1	0:09				M7 (R)	M5 (R)	12
	4	Upper	2	W2	A2	0:09				M7 (B)	M6 (R)	18
3	5	Lower	1	L2	L3	0:15	0:09			M8 (B)		24
	6	Lower	2	L1	L4	0:27	0:09			M8 (R)	Tied 5th	30
4	7	Upper	1	W4	W3	0:15	0:21			M10 (B)	M9 (B)	26
	8	Lower	2	W5	W6	0:15	0:09			M9 (B)	4th	42
15-minute break		Design Award (2, 1), Motivate Award (2, 1)										
5	9	Lower	1	W8	L7	0:15	0:21			M10 (B)	3rd	60
15-minute break		Control Award (2, 1), Innovate Award (2, 1)										
Finals	10		1	W9	W7	0:15	0:39			M11*	M11*	78
15-minute break		Connect Award (2, 1), Think Award (2, 1)										
Finals*	11		1	W9	W7	0:15	0:15					96
Awards: Compact, Finalists, Winners, and Inspira Award (3, 2, 1)												

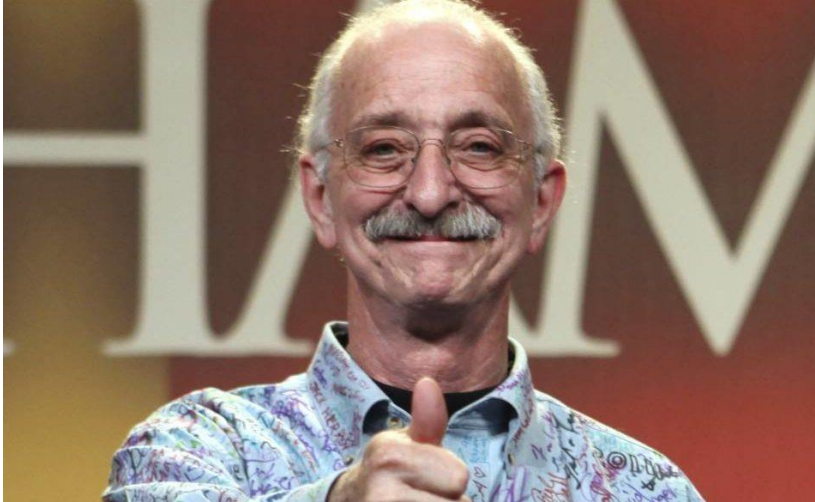
* If required

**Awards may be given out after the conclusion of the playoff bracket at the discretion of the event director

Judging

JoAnn Halloran

***Gracious Professionalism* or GP**



GP is a personal standard that we hold ourselves accountable to.

- It should *not* be a stick that we use to measure the performance of others.

Each of us interprets *Gracious Professionalism* in our own way. It's personal.

Holding a team accountable for our own view of GP seems unreasonable.

In every case, when one person assumes that a team is not behaving in a GP fashion without a conversation with the team, we create a power imbalance that we would prefer to eliminate.

Engineering Portfolio

Is no longer required for most awards.

Exceptions are:

- Think Award
- Control Award
- And by default, Inspire Award

Why have we made this change?

Teams should be able to articulate, or document, or demonstrate their skillset, without the hard requirement of that content being put into a document.

This helps us to celebrate more teams in the place where they are, without adding an additional requirement that may not be a strength within their skillset.



Questions???



**INTO THE
DEEP**SM

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 **FIRST
TECH
CHALLENGE**