Problem Statement	Queries	Response
Autonomous Indoor Drone	Do we have to submit a Gazebo simulation for the navigation or the complete control based on image processing?	Gazebo/ Simulink can be used for Drone simulation. For image processing, can be algrothm based submission.
Autonomous Indoor Drone	I have queries related to PPT which we have submit on 30 July . It is compulsory to use gazebo ? What we have submit for Aerodynamic and pay load calculation?	1.Gazebo/ Simulink can be used for Drone simulation 2. Aerodynamic calculations will include how you calculated thrust to weight ratios
Autonomous Indoor Drone	1) Should only use Gazebo Simulation to simulate the model?? Can we not use other Simulation Platforms like Simscape and Simulink?? 2) In Frame Detection and Flight Algorithm details, are only the algorithms enough or should we send the code as well?? 3) In slide 3, where Technical Specifications are asked. Can you please elaborate on what technical specifications we need to enter there!??	1. You can use any platform 2. Algorithm is enough for round 3. A block diagram will be helpful 3. Tech specification at component level is needed
Autonomous Indoor Drone	We wanted to know if it is ok that we have designed a drone that does not pickup the payload by itself, the payload is to be placed by the user and also removed at the endpoint by the user.	Yes, the payload can be placed manually.
Autonomous Indoor Drone	We are students from NITC. Unfortunately the deadlines for this stage are very close to the start of end semester exams as well as other internal exams and submissions. Is it possible to reconsider the deadlines or at the very minimum give groups from NITC a chance to submit later	We have extended the deadline to 9th Aug. Hope that helps! :)
Autonomous Indoor Drone	The grand finale round details mention the making of drone by teams, but since our college has notified us of a completely online semester, we may not be able to make it as we're all from different states. Keeping this & the pandemic in mind, will Flipkart make any changes to competition structure?	For the grand finale, we will keep in mind the situation and decide accordingly
Autonomous Indoor Drone	The ppt that is provided, do we have to use that format as a presentation in the video or do we have to make a video separately according to that and also submit the ppt because the it is asking for the links too so my team is confused about do we have to submit the video or ppt or both.	You can submit video along with the PPT
Autonomous Indoor Drone	1) Can we use Simulink instead of Gazebo, for simulation. Because everything we have planned is on Simulink! 2) Can we get the dataset for the frames, such as pictures of the frame so that we can feed that to our DL algorithm to detect the frames.	1. Answered earlier 2. We have given the specification of the frame & the distance, color, etc. This should be enough to train your algorithm initially for Round 3

Autonomous Indoor Drone	1.) Is budget constrained by upper limit of 60,000 as mentioned in FAQ or might exceed a bit 2.) Can we use components already owned by us so as to have better parts in same budget 3.) Slide limit for Round-3 4.) What all relevant files needed to be submitted with respect to Gazebo Simulation	1. Budget - 50,000 per team is what would be sponsored by us. 2. You can use the existing components that you own in order to save time in ordering and transit but make sure that the components are not discontinued and include the current cost of the components in overall budget. 3. No slide limit. Do not just copy paste data, you can add a ref link instead 4. Navigation part of the simulation software

Autonomous Indoor Drone	1) Size and spacing of the hoops : Please confirm the size of the hoops and the parallel spacing between any two hoops. The numbers given in the PS and FAQ Sheet are a bit impractical for a minimum payload requirement of 2Kgs. We expect that no changes will be made to these numbers after your reply confirming the same. 2) Walls : Will the walls on either side of the aisle be formed of smooth continuous sheets/material or will it be a make-shift wall (i.e discontinuous; for example a rack with some boxes). Also will the walls be as tall as the top edge of the gates? 3) Payload : What will be the penalty if a team does comply with the minimum payload requirement described in the PS (i.e 2kgs). Also please confirm this value, because this requirement complicates the design phase by a huge margin and changing (reducing) this number down the line on short notice will render our hard work meaningless. 4) Launch Coordinates: Please specify the coordinates of the Launching Point, wrt the arena fixed frame (some feature of the arena to be used for reference; for example 5m in ahead of the first gate, in the middle of the aisle) 5) Prototype Funds: Assuming that we clear the 3rd round. We would like to know the details of the component purchase/reimbursement procedure. 6) Demonstration video: Please provide more details on the same. Are we expected to make a video including the screen recording of the simulation with voice-over and textual annotations, and link the same in the slide deck? Or a video recording of us presenting the entire slide deck. 7) Aerodynamic and Payload calculations: As we are required to develop a multirotor type UAV and not a Fixed-Wing UAV, what calculations are you looking for. Please provide additional details. 8) Stability Analysis: What do you mean by this exactly? Are we supposed to analyse Dynamic Stability of the System or Structural (Buckling) Stability? In case of Dynamic Stability, we can only assess the performance of the attitude control system, as Multirotors are inherently unstable and need active control for stabilisation. In the latter case (Structural), as we do not have any major compressive loads the analysis will not be useful to a large extent.	1. Mentioned in spec document. 2. We have not yet finaized on the walls specifications. 3. 2 kg is our requirement. There may be some deduction in points in final round if this is not met. 4. Too early for this! 5. Yes, teams in Grand Finale will get more details on this. 6. Initial couple fo minutes can be you explaining the concept, and then screen-recording with voice over / text will be fine. 7. We have not got any fixed rotor solutions so far. Other calculations have been shared. 8. We want to know the structural calculations and dynamic stability of the drone while flying (understand how stable the drone during the flight - eg -where the CG is, etc).
Autonomous Indoor Drone	1. Would the deadline be extended? 2. What should be mentioned in the current progress, considering that we have just strated working upon th simulations just now. 3. Do we have to mention the mechanical or control stability on slide 3?	Answered above

Autonomous Indoor Drone	The time given for round 3 is very less, can we have it extended?	We have extended it till 9th Aug - Hope that is helpful
Autonomous Indoor Drone	1. Is there any limit to the number of slides? 2. Please provide lighting details of the arena. 3. Does stability involve structural stability or the stability of the drone while flying or both? 4. What exactly do you mean by aerodynamic and payload calculation?	1. No limit on the number of slides 2. It will be well lighted. Exact details to be shared later. 3. Structural calculations and dynamic stability of the drone while flying 4. Answered above
Autonomous Indoor Drone	1. How many teams will be selected for the finale? 2. Judging criteria. 3. PPI is offered for qualifiers of which round? 4. How is the obstacles placed(static or dynamic) during the fly time. 5. Will the cost of implementation be compared with other teams for judgement.	1. Top 3 teams per problem statement 2. Detailing / completeness / feasability, etc 3. PPI details to be shared later 4. Static obstacles 5. Yes, cost is a factor.
Autonomous Indoor Drone	1)Can we use ready to fly drones or build custom drone	Both options are open, depending on your solution & budget. However, if in your round 2 submission you have decided to build a drone, don't change your approach in Round 3. Also, if you use ready to fly drones, all other requirements etc remain the same.
Autonomous Indoor Drone	How is the gazebo simulation supposed to be attached to the PPT? Are there are any constrains to it?	You can upload to Google drive, onedrive, etc and share links in ppt
Autonomous Indoor Drone	1. Will we be provided with a budget for building drone in the final stage? If yes, then how much? 2. In the 2nd phase, we are just supposed to create 3D models on only software right?	Answered above
	What happens to the IP rights? Do they belong to Flipkart automatically?	We will have a NDA signed with the Grand Finale teams which will have more details on this.
	Are we allowed to make design changes to the drone frame	You can improvise but don't change entirely
	Can we have ground station to do all processes?	Yes, but it has to be automated and not manual
	Are we allowed to add more funds on top of Flipkart's budget?	Yes, you can. However, keep in mind that the cost is an aspect of feasability, so try to stay as close to the 50,000 budget
	Distance between frame & color of frame	Mentioned in FAQ
	Access to 3D printer will be given to us by Flipkart?	You have to manage on your own

Live Questions	What is expected in the simulation	Simulation should cover the Drone navigation, stress analysis, altitude stability & payload conditions. It should take care of all real time tracking of Drone parameters such as roll, pitch, yaw, thrust & PID controls. Simulation should consist of a 3D replica of the Drone under consideration. Major checkpoint is the position control of the Drone, as how effectively it can hold the altitude and perform the required functions. Using Gates as an obstacle in the simulation is optional
	Length of Aisle	Mentioned in FAQ
	Can we give animated videos	Yes
	Can we launch the drone from anywhere in the arena	Yes, anywhere before the first gate (Approx 5m from the gate)
	Volume constraints, if any, for payload?	No, that's flexible and upto you.
	Flight Time would be how much?	Time taken to cover all the gates
	Can we change algorithm from Round 2	Yes, you can improve it. But highlight any major changes.