

2016 DJI Developer Challenge

DJI Introduction Presentation and Rundown

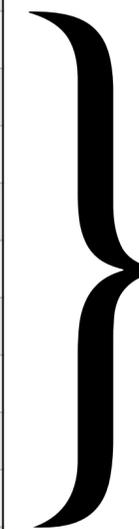
Itinerary for the 27th

8:00	<ul style="list-style-type: none"> • Teams Arrival at Griffiss and submit equipment for NUAIR Airworthiness Check • Identification & DJI Gifts given • Teams pick mission order for final day at random at the front • Teams provide DJI Staff with preferred communication method • GPS Coordinates of Truck provided to teams
8:15	<ul style="list-style-type: none"> • DJI Introduction Presentation
8:30	<ul style="list-style-type: none"> • NUAIR Safety Talk
9:00	<ul style="list-style-type: none"> • Equipment returned to teams • Teams to check their equipment with the AV setup in the Hangar
9:15	<ul style="list-style-type: none"> • First team head out to search area • Either alphabetical first, or whomever gets equipment back from airworthiness check
<i>Begin Team Flight Testing</i>	
9:30	<ul style="list-style-type: none"> • Autero (or first arrived team)
10:15	<ul style="list-style-type: none"> • Cardinal S.A.R.
11:00	<ul style="list-style-type: none"> • Graz Griffins
11:45	<ul style="list-style-type: none"> • hawkeye
12:30	<ul style="list-style-type: none"> • KAIST-URL
13:15	<ul style="list-style-type: none"> • MachInsight
14:00	<ul style="list-style-type: none"> • mrasl
14:45	<ul style="list-style-type: none"> • SEU Drone
15:30	<ul style="list-style-type: none"> • SHJIU Team
17:00	<ul style="list-style-type: none"> • Happy Hour in the Hangar
<i>End of Day</i>	

} Lunch served
in Hangar from
10:30 to 14:00

Itinerary for the 28th

8:00	• Team Arrive at Griffiss and settle down in Hangar
8:30	• DJI Kick-off Presentation
8:45	• First and Second teams heads out to Tent to Pre-Prepare
<i>Begin Final Competition</i>	
9:00	• Team 1
9:45	• Team 2
10:30	• Team 3
11:15	• Team 4
12:00	• Team 5
12:45	• Team 6
13:30	• Team 7
14:15	• Team 8
14:45	• Team 9
15:00	• Break • interviews and Media Time
17:45	• Buffet Dinner and Award Ceremony in Hangar
19:30	• Teams to clear out of Griffiss Airport
<i>End of Day</i>	



Lunch served
in Hangar from
10:30 to 14:00

Important notes

- Keep an eye on the time and the schedule
 - Teams will have 45 minutes allocated time to work with the Ford F150
 - This includes setting up the car, the mission, and clearing out the car
 - On Sunday, one point will be deducted from the team's score per minute over the 45min schedule
- Safety is your Number 1 Priority.
 - Obey every command given to you by Airport or NUAIR officials as well as DJI judges. Failure to do so may result in disqualification from the competition or being removed from the premise.
 - Aircraft must stay under 300 feet (91.44m) at all times
- Weather Contingency
 - If a team is unable to execute their mission on the 28th due to weather reasons, the score from the 27th will be used instead
- No Food or Drink on the second floor

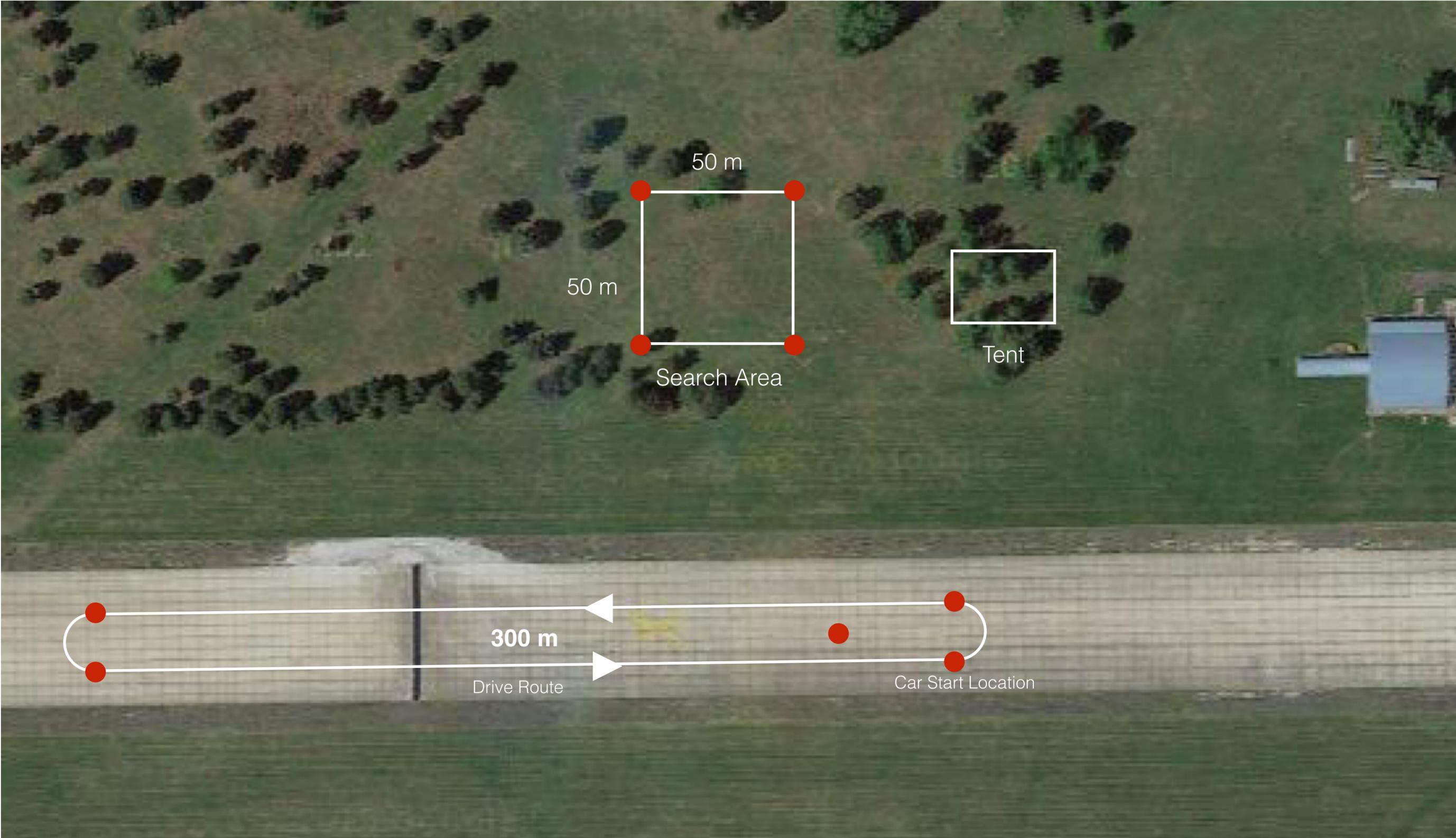
Rule Review

Achievement	Points
Successful ID of each Survivor AprilTag	+1
Survivor AprilTag Location (within 5m accuracy)	+1
False Positive Survivor's AprilTag ID	-1
Successfully Landing on Vehicle	+11
Bonus if Vehicle is Moving	+9
Successful Landing on Ground	+3
Use Ford API to initiate mission	+5

- In the event of a tie, the team with the shortest Mission Time wins.
- mission ends if landed, aborted, or crashed
- If landing is unsuccessful, Mission Time is time from take-off to last Survivor AprilTag ID (either true or false positive)

- M100s must take off from a moving vehicle
- Teams can choose to land on a moving vehicle, stationary vehicle, or on the ground
- Mission timer is stopped when M100 propellers off, at the discretion of the Car Judge
- An AprilTag is considered 'detected' when its image is captured and a bounding box correctly highlights.
- The entire mission must be entirely automated and no commands or actions can be taken on the third party payloads or equipment. Failure to comply will result in disqualification; decision at the discretion of the in-car judge.

Map



● GPS Coord

Normal Process

Pre Round	Team	Arrive at tent at start of previous teams round
	DJI Tent Judge	Check team equipment (TB47 Battery, M100)
	Team	Final Prep

Start Round	Note	Car starts at tent
	DJI MC	Introduce Team
	Team	Connect to Car Network
	DJI Tent Judge	Starts Round Timer (45min start) Radio: Time Start
	DJI CT Judge	Starts Backup Timer
	Team	Setup Vehicle (cannot install propellers)
	DJI CT Judge	Calculate Wind Speed, send to DJI Car Judge, Driver
	Contestant	Enter car with M100
	DJI Car Judge	Enter Car (if not already in)
	DJI Driver	
	Nuair Pilot	
	Driver	Drive to Start Position

Normal Process

Take-off	Note	Car at "Start Location"
	Contestant	Connects propellers to M100 Mounts M100 on back of F150
	DJI Car Judge	All ok Check: Contestant DJI CT Judge DJI Tent Judge Nuair Pilot Driver
	Driver	Starts driving around track
	DJI Car Judge	When speed reached: Radio: Ready for Take-off
	Contestant	Signal intention to take-off Initiate take-off
	DJI Car Judge	Radio: Mission Start Start Mission Timer Radio: Ford API? Affirmative or Negative
	DJI CT Judge	Start Back-up Mission Timer Scores Ford API points
	Driver	Return to Start Position and idle

April Tag Detected	Contestant	Says Detected
	DJI Car Judge	Radio: April Tag Detected Marks time in timing system Takes picture of app screen if live video is down
	DJI CT Judge	Records Back-up time Enters tag information in scoring system
	DJI CT AV	Double checks GPS information
	DJI CT Judge	Saves Tag information in scoring system

Normal Process

Car Restarts Driving	Note	F150 at "Start Location", M100 in search area
	Contestant	Issue start driving command to DJI Car Judge
	DJI Car Judge	Confirm, then issue to driver Radio: Restart Driving
	Driver	Starts driving around track

Abort Driving	Contestant	Issue stop driving command to DJI Car Judge
	DJI Car Judge	Confirm, then issue to driver Radio: Driving Aborted
	Driver	Return to Start Position

Aircraft Lands on Car	DJI Car Judge	Judges when landed Stop mission timer Radio: Mission Complete - Landed on Car
	DJI CT Judge	Stop Back-up timer
	Driver	Stop F150
	Contestant	Retrieve M100 Remove Propellors
	Driver	Return to Tent

End Round	Team	Unload all equipment from F150 Leave car WiFi network
	DJI Tent Judge	Judge when team is done Radio: Round Complete

Finalize Score	DJI Car Judge	Confirm final mission time
	DJI CT Judge	Confirms mission time is within 10s of back-up time If in agreement, finalize score If not, work with DJI Car Judge and DJI CT AV to finalize

Contingencies

Aircraft Lands on Ground	DJI Car Judge	Judge when aircraft is down (live feed, visual) Stop mission timer Radio: Mission Complete - Landed on Ground
	DJI CT Judge	Stops back-up timer
	Car Or Tent	Whoever is closer to, and able to, retrieve M100
	Driver	Drive back to tent
	All	Follow End Round procedure

Aircraft crashes	DJI Car Judge	Stop mission timer Radio: Mission Mishap
	DJI CT Judge	Stop backup timer Determine mission time based on last tag detected
	Car Or Tent	Whoever is closer to, and able to, retrieve M100
	Driver	Drive back to tent
	All	Follow End Round procedure

Aircraft flies in restricted zone <small>Too close to tent or out of triangle</small>	DJI or Nuair Judge	Request to abort mission
	DJI Car Judge	Land M100 immediately in safe location Radio: Mission Abort - M100 flew in restricted zone
	DJI CT Judge	Stop Back-up timer

Unrelated Abort	Nuair Pilot	Call abort for mission unrelated reason
	DJI Car Judge	Land M100 immediately in safe location Radio: Mission Abort - Unrelated to Mission
	DJI CT Judge	Stop Back-up timer
	Team	Gets penalty free restart with new battery

Contingencies

Contestant takes manual control or aborts	Team	Take manual control or abort
	DJI Car Judge	Radio: Team Abort Stop mission timer
	DJI CT Judge	Stop back-up timer

Contact Information

Name	Location	Role	Contact Information
Stephen	Everywhere	Event Manager	Phone: +1 (408) 583-7432 WeChat: stephenrwu
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Benz	Tower Hangar	Tower Judge Hangar Manager	Phone: WeChat: Ben_Huang
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Arnaud	Tower	Technical Expert AV & Mobile SDK	Phone: +1 (650) 644-7828 WeChat: N/A

Information on the day will be distributed through the following:

- Email mailing list
- Texting message
- WeChat

Keep a close eye on your preferred method of communication

You can always find your local regional manager to help you contact other DJI employees

GPS Coordinates

	Latitude	Longitude
Truck Path #1	43.2299043	-75.4180322
Truck Path #2	43.2296988	-75.4180269
Truck Path #3	43.2298643	-75.4217101
Truck Path #4	43.2296581	-75.4217012
Truck Path (Ground Landing)	43.229798	-75.4183286
Searching Area #1	43.2305196	-75.4191453
Searching Area #2	43.2309682	-75.4191223
Searching Area #3	43.2309511	-75.4197423
Searching Area #4	43.2304999	-75.4197515

Questions?

Next Steps:

- Team 1 collect equipment for NUAIR and proceed to AV check; be ready and in the car by 9:30!
- Other teams collect equipment if available and standby; paying attention to the schedule!