

ZABBIX 2022 Conference

BRAZIL

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MONITORING DRONES
-- going beyond technology

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RBB

An **unmanned aerial vehicle (UAV)**, commonly known as a **drone**, is an aircraft without any human pilot, crew, or passengers on board. UAVs are a component of an unmanned aircraft system (UAS), which includes adding a ground-based controller and a system of communications with the UAV.

The flight of UAVs may operate under remote control by a human operator, as **Remotely-piloted aircraft (RPA)**, or with various degrees of autonomy, such as autopilot assistance, up to fully autonomous aircraft that have no provision for human intervention.

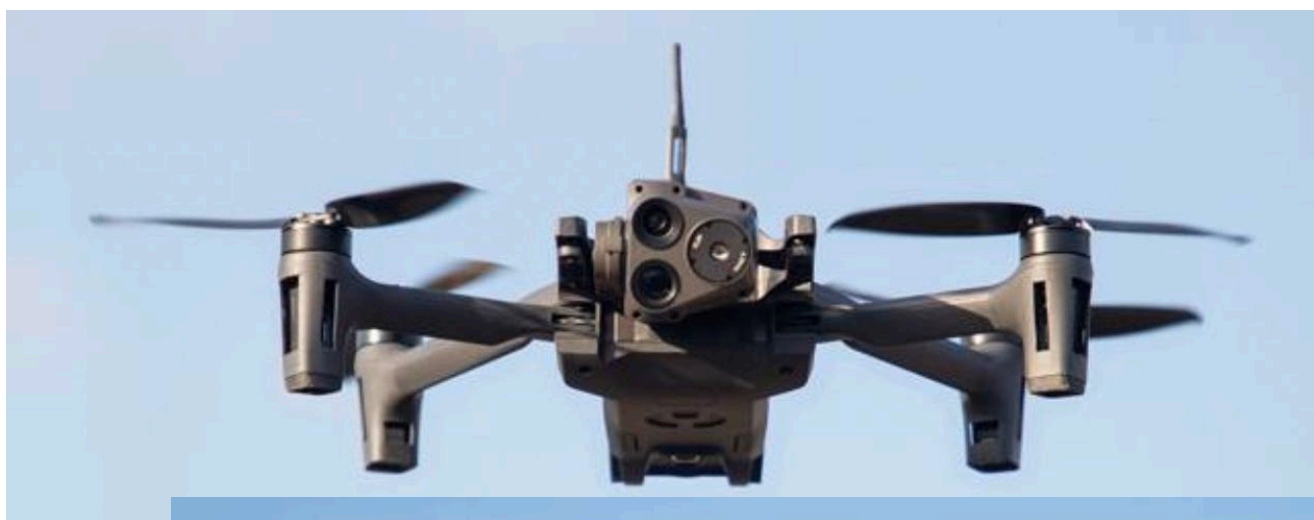
UAVs were originally developed through the twentieth century for military missions too "dull, dirty or dangerous" for humans, and by the twenty-first, they had become essential assets to most militaries.



Military



Military



Military

As control technologies improved and costs fell, their use expanded to many non-military applications.

These include forest fire monitoring, aerial photography, product deliveries, agriculture, policing and surveillance, infrastructure inspections, science, smuggling, and drone racing.

where is it used nowadays



Non-Military



Non-Military



Non-Military

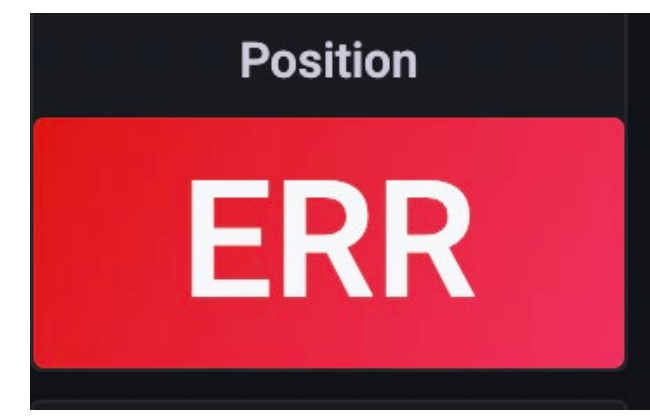
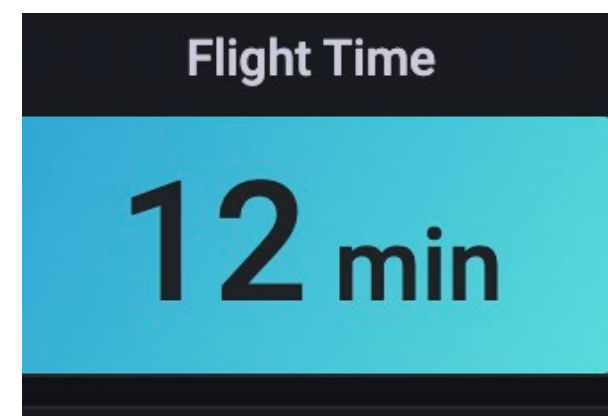
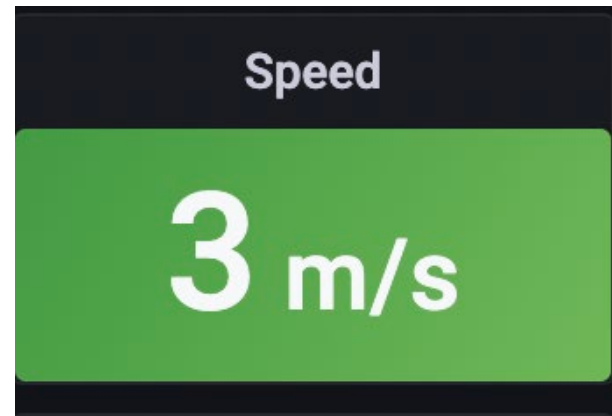
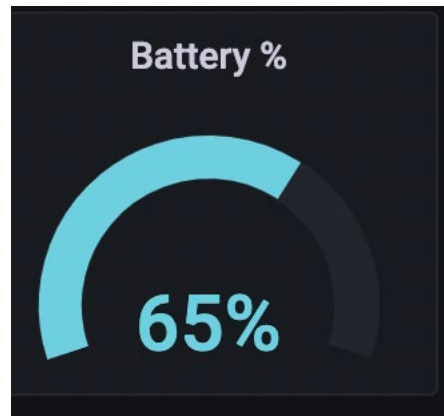


Non-Military



Non-Military

what can we get from information



Realtime

[illegible]





Realtime



where else can we use



“every day a visionary and a developer leaves the house.
When they meet, a new business is created.”

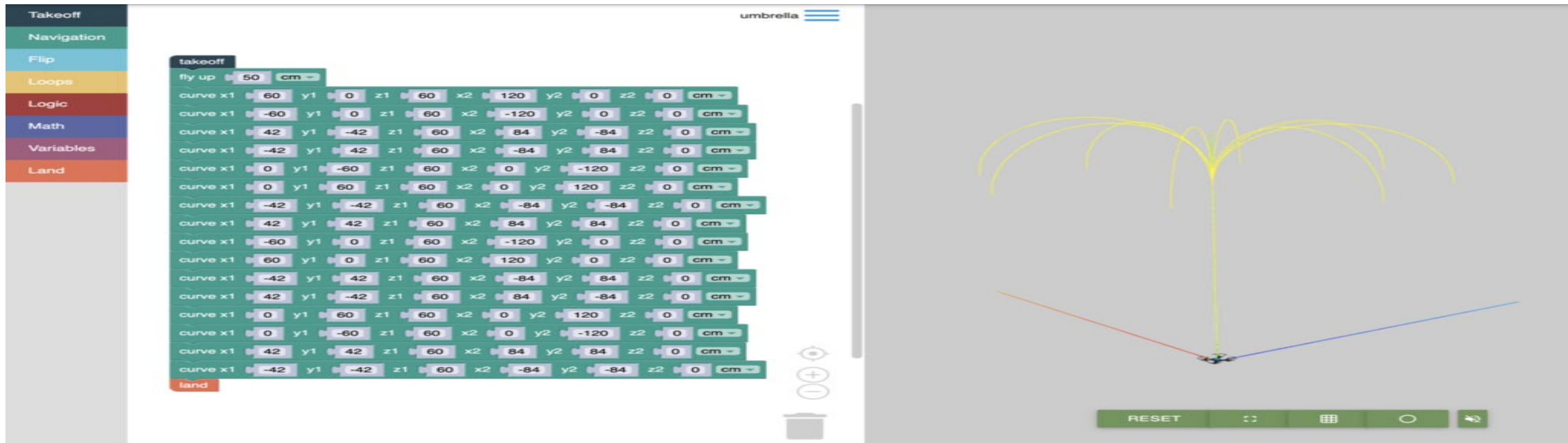


Tello Commands

Control Commands

Command	Description	Possible Response
Command	Enter SDK mode.	ok / error
takeoff	Auto takeoff.	
land	Auto landing.	
streamon	Enable video stream.	
streamoff	Disable video stream.	
emergency	Stop motors immediately.	
up x	Ascend to "x" cm. x = 20-500	
down x	down "x" Descend to "x" cm. x = 20-500	
left x	Fly left for "x" cm. "x" = 20-500	
right x	Fly right for "x" cm. "x" = 20-500	
forward x	Fly forward for "x" cm. "x" = 20-500	
back x	Fly backward for "x" cm. "x" = 20-500	

Flight Plan



Flight Plan

←

⬇

⚠

⬆

Wi-Fi not connected.
You need to connect to the IP to view the current version.

Motion

Control

Variables

Operator

Sensing

⬇

⬆

⬅

Take Off

Land

Speed 50 %

Up 100 cm

Down 100 cm

Front Flip

Forward 100 cm

Back 100 cm

Back Flip

Left 100 cm

Right 100 cm

Left Flip

Left Yaw 90 Angle

Right Yaw 90 Angle

Right Flip

Go XYZ 90 cm 90 cm 90 cm

Curve P1 X 0 Y 0 Z 0 P2 X 0 Y 0 Z 0

Go XYZ 90 cm 90 cm 50 cm M -1

Jump X 0 Y 0 Z 50 Angle 0 M1 -1 M2 -1

Curve P1 X 0 Y 0 Z 50 P2 X 0 Y 0 Z 50 M -1

▶ Tap to start

⌵

Flight Data

Total Flight Time 0s

Attitude Pitch 0°

Attitude Roll 0°

Attitude Yaw 0°

Acceleration X 0(0.001g)

Acceleration Y 0(0.001g)

Acceleration Z 0(0.001g)

Min Temperature 0°C

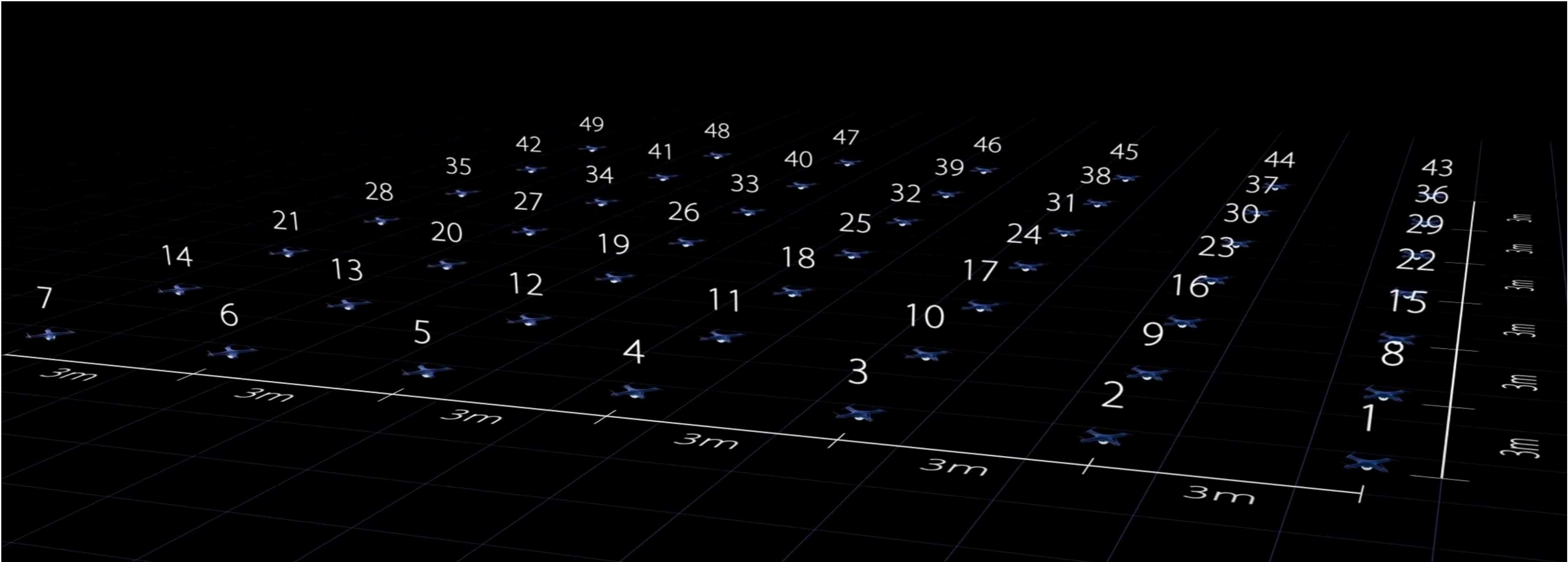
Max Temperature 0°C

TOF Altitude 0cm

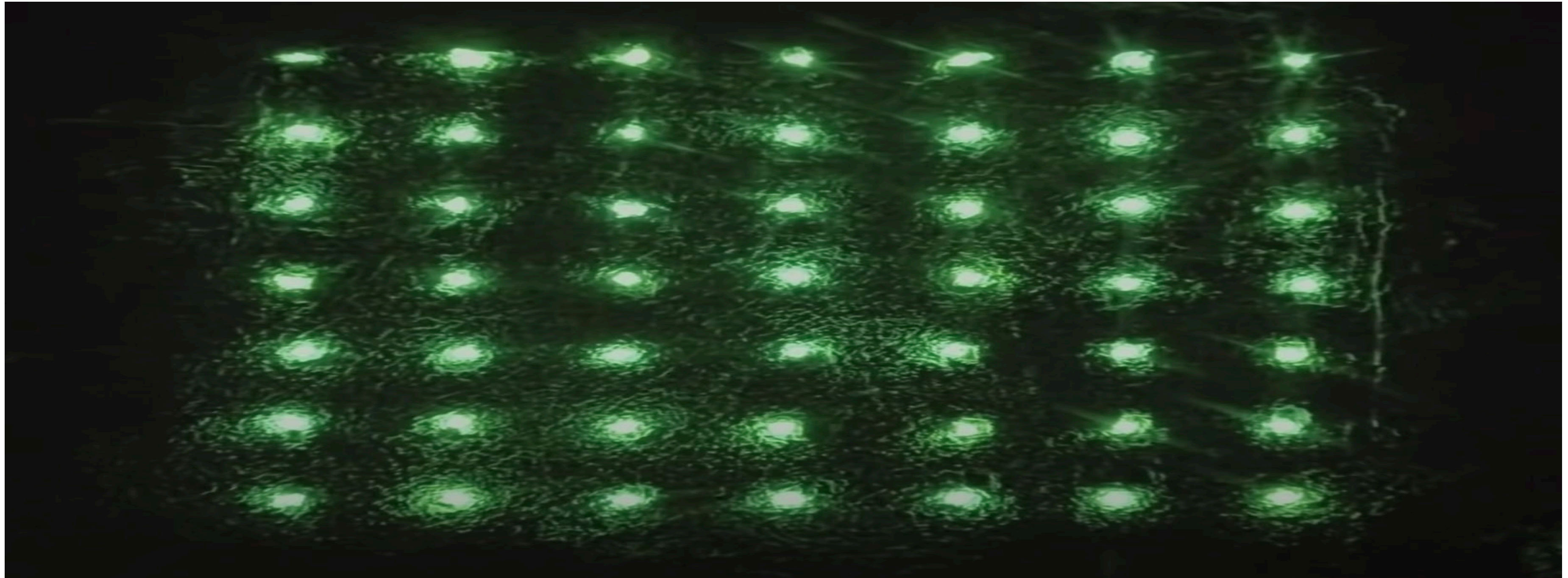
Altitude 0cm

Barometer 0cm

“you mustn’t be afraid to dream a little bigger, darling.” Inception (2010)



Dream Bigger



Dream Bigger





Cool! And where does Zabbix fit into it?

and where does Zabbix fit into it

☐ Host	Name ▲	Last check	Last value	Change	Tags	Info
☐ Drone 3	Battery %	14s	10 %			Graph
☐ Drone 3	Flight Plan					History
☐ Drone 3	Flight Time	14s	120			Graph
☐ Drone 3	Position	14s	1			Graph
☐ Drone 3	Speed	14s	2 cm/s	-1 cm/s		Graph
☐ Drone 3	Status	14s	0			Graph

and where does Zabbix fit into it

Time ▾

☐

Severity

Recovery time

Status

Info

Host

Problem

Duration

Ack

Actions

Tags

19:03:05	☐	Disaster	19:07:06	RESOLVED		Drone 3	Drone 3 with problem	4m 1s	No	2	DRONE_MODEL: DJI DRONE_POSITION: 2
19:00	☐										
18:58:03	☐	High		PROBLEM		Drone 3	Drone 3 battery is low	10m 23s	No		

0 selected

Mass update

Time

User/Recipient

Action

Message/Command

Status

Info

2022-06-01 19:07:06		☒			
2022-06-01 19:04:05		>_	Remote command	Executed	
2022-06-01 19:03:05		>_	Remote command	Executed	
2022-06-01 19:03:05		☐			

and where does Zabbix fit into it

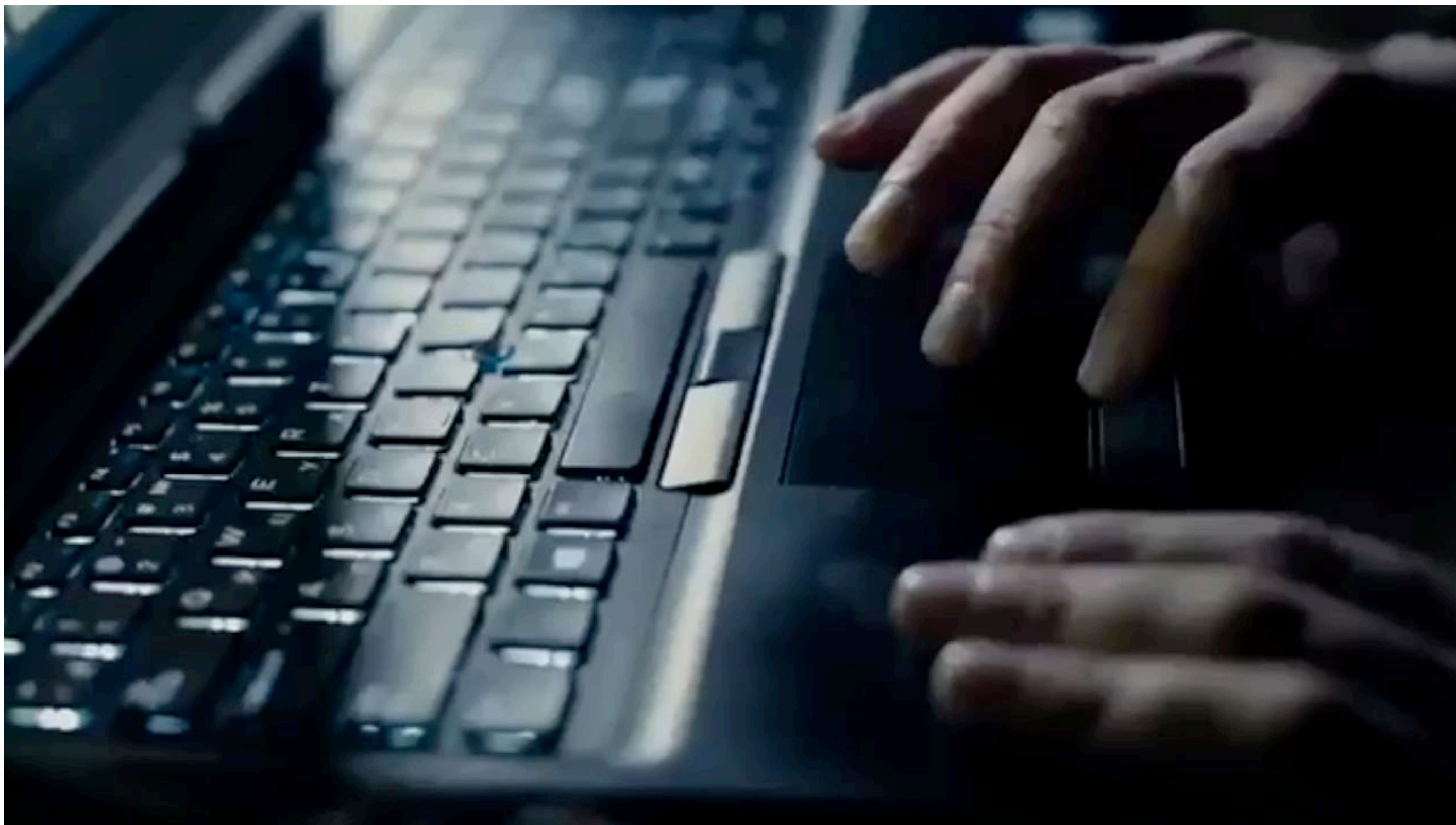
```
227610:20220601:140305.364 End substitute_simple_macros_impl() data:'Drone 3 with problem'
227610:20220601:140305.366 query [txnlev:1] [insert into events (eventid,source,object,objectid,clock,ns,value,name,severity) values (3312,0,0,22685,1654110185,212888277,1,'Drone 3 with p
roblem',5),(3313,0,0,22686,1654110185,281272056,0,'Drone 4 with problem',0);
227610:20220601:140305.377 query [txnlev:1] [insert into problem (eventid,source,object,objectid,clock,ns,name,severity) values (3312,0,0,22685,1654110185,212888277,'Drone 3 with problem'
,5);
227618:20220601:140305.592 End substitute_simple_macros_impl() data:'/usr/lib/zabbix/externalscripts/DSS.py land Drone 3'
```

and where does Zabbix fit into it

```
227610:20220601:140305.364 End substitute_simple_macros_impl() data:'Drone 3 with problem'
227610:20220601:140305.366 query [txnlev:1] [insert into events (eventid,source,object,objectid,clock,ns,value,name,severity) values (3312,0,0,22685,1654110185,212888277,1,'Drone 3 with p
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227610:20220601:140305.377 query [txnlev:1] [insert into problem (eventid,source,object,objectid,clock,ns,name,severity) values (3312,0,0,22685,1654110185,212888277,'Drone 3 with problem'
,5);
227618:20220601:140305.592 End substitute_simple_macros_impl() data:'/usr/lib/zabbix/externalscripts/DSS.py land Drone 3'
```

```
227618:20220601:140405.744 In zbx_popen() command:'/usr/lib/zabbix/externalscripts/DSS.py up $(/usr/lib/zabbix/externalscripts/DSS.py last flight-plan Drone 3) Drone 3_BKP'
227618:20220601:140405.752 query [txnlev:0] [insert into alerts (alertid,actionid,eventid,clock,message,status,error,esc_step,alerttype,parameters) values (403,7,3312,1654110245,'Drone 3:
/usr/lib/zabbix/externalscripts/DSS.py up $(/usr/lib/zabbix/externalscripts/DSS.py last flight-plan Drone 3) Drone 3_BKP',1,'',2,1,'');

```

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