1
00:00:00,200 --> 00:00:15,260
[Engine noise]

2
00:00:15,269 --> 00:00:17,270
On launch day before the actual launch of

3
00:00:17,270 --> 00:00:23,800
the ORION takes place in Florida the IKHANA
will take off from NASA Armstrong Flight Research

4
00:00:23,800 --> 00:00:29,570
Center and head out to the Pacific to acquire
the ORION Capsule on reentry and look at the

5
00:00:29,570 --> 00:00:35,140
parachutes as they come out. So we will be
at an altitude that when the ORION capsule

6
00:00:35,140 --> 00:00:40,039
is coming in it will be coming towards us
as it is going down.

7
00:00:40,039 --> 00:00:43,800
[Radio Chatter]
We are going to use the infrared camera to

8
00:00:43,800 --> 00:00:48,590
acquire the vehicle as it is coming down and
eventually change to the optical camera to

9
00:00:48,590 --> 00:00:55,410
give better situational awareness of what
is going on at splashdown.

10
00:00:55,410 --> 00:01:02,350
IKHANA is a native American Choctaw word that
means conscious, self-aware, and intelligent

11
00:01:02,350 --> 00:01:06,130

and the reason that we chose that name for
the airplane is that we were interested in

12
00:01:06,130 --> 00:01:12,430
doing research in autonomous control and the
ways the airplane could assist the pilot in

13
00:01:12,430 --> 00:01:18,530
avoiding collisions or avoiding traffic and
being able to respond to its own environment

14
00:01:18,530 --> 00:01:23,030
in a safe way.

15
00:01:23,030 --> 00:01:28,259
The agency has used the IKHANA UAS in several
different ways. IKHANA supported the Western

16
00:01:28,259 --> 00:01:33,649
States Fire Mission. The goal there was to
provide situational awareness to the fire

17
00:01:33,649 --> 00:01:39,600
fighters in the middle of fighting a fire
and do it in almost real time manor. Something

18
00:01:39,600 --> 00:01:43,899
they have not been able to have from the air
in the same way.

19
00:01:43,899 --> 00:01:50,899
[Radio Chatter]
We have also flown fiber optic technology

20
00:01:51,569 --> 00:01:58,569
on the airplane to measure the wing bending
on the airplane. With the fiber they can measure

21
00:01:58,969 --> 00:02:05,079
like, 100s of times more of what the wing

was doing. So if you want to have the feedback

22
00:02:05,079 --> 00:02:10,069
of what you want the wing to do; either by
bending the wing or by bending other surfaces,

23
00:02:10,069 --> 00:02:14,989
you have way more feedback by doing it this
way.

24
00:02:14,989 --> 00:02:21,989
[Radio Chatter]
Right now we're getting ready to fly the airplane

25
00:02:24,140 --> 00:02:30,530
with a research flight control system that
will allow an eventual autonomous capability

26
00:02:30,530 --> 00:02:37,530
of the airplane, primarily for self-separation.
Our goal is to improve the safety of UAS flying

27
00:02:38,720 --> 00:02:44,320
in the national air space. And if we can help
the pilots on the ground controlling the remotely

28
00:02:44,320 --> 00:02:50,890
piloted airplanes know where the traffic around
them is and give them standard ways to separate

29
00:02:50,890 --> 00:02:54,810
from that traffic this would be a great way
to do that.