
FR-12

1
00:00:00,380 --> 00:00:04,120
[Music]

2
00:00:08,880 --> 00:00:11,650
>>We're developing a conformal antenna.

3
00:00:11,650 --> 00:00:17,020
We're looking to transition off of larger,
traditional antennas that may have a very

4
00:00:17,020 --> 00:00:21,970
large volume and require a gimbal to move
it around to point at different, say, satellites,

5
00:00:21,970 --> 00:00:24,540
for communications.

6
00:00:24,540 --> 00:00:28,470
This particular antenna is a multi-center
collaboration.

7
00:00:28,470 --> 00:00:34,590
It was designed at NASA Glenn in Cleveland,
on-aircraft modeling of the antenna's performance

8
00:00:34,590 --> 00:00:40,410
done at NASA Langley, preflight planning done
at NASA Ames, and then finally we had integration

9
00:00:40,410 --> 00:00:43,900
done at NASA Armstrong.

10
00:00:43,900 --> 00:00:49,040
The antenna is made up of sixty-four little
antennas that combine to perform the function

11
00:00:49,040 --> 00:00:54,690
of a much larger antenna; that allows us to
generate steering of the beam as well as minimize

12
00:00:54,690 --> 00:01:00,730
interference with ground users, to form interesting
pattern characteristics that are hard to obtain

13
00:01:00,730 --> 00:01:03,690
with a traditional antenna.

14
00:01:03,690 --> 00:01:08,579
And making use of this light-weight aerogel
material, this is nearly ninety-five percent

15
00:01:08,580 --> 00:01:16,000
air and allows us to have a very efficient
antenna for generating our communication signals.

16
00:01:17,360 --> 00:01:19,220
[Background noise]

17
00:01:19,220 --> 00:01:20,860
>>It's ready to go.

18
00:01:21,320 --> 00:01:31,560
[Airplane revving up, taking off]

19
00:01:35,400 --> 00:01:38,720
>>Our climb card is complete, setting up for Run
One then.

20
00:01:38,720 --> 00:01:42,620
And turning inbound for the first run, are
you guys ready?

21
00:01:43,040 --> 00:01:46,340
[Background chatter]

22
00:01:46,340 --> 00:01:48,860
>>Copy altitude verified.

23
00:01:49,460 --> 00:01:51,760
[Background chatter]

24
00:01:52,460 --> 00:01:58,259
>>We're actively taking a run which allows us
to measure the antenna pattern characteristics

25
00:01:58,259 --> 00:02:03,429
so that we can verify that the antenna is
functioning correctly but also see how much