1
00:00:00,000 --> 00:00:02,620
Narrator: Popular Science Magazine has named

2
00:00:02,640 --> 00:00:05,230
NASA's PhoneSat project as a winner in the

3
00:00:05,250 --> 00:00:07,830
Aerospace category of its 2012

4
00:00:07,850 --> 00:00:10,420
Best of What's New Awards.

5
00:00:10,440 --> 00:00:12,780
The awards, now in their 25th year,

6
00:00:12,800 --> 00:00:15,480
highlight innovations that once seemed impossible,

7
00:00:15,500 --> 00:00:18,090
yet today really exist.

8
00:00:18,110 --> 00:00:20,170
Based at NASA Ames Research Center,

9
00:00:20,190 --> 00:00:22,690
the goal of the PhoneSat project is to lower the cost

10
00:00:22,710 --> 00:00:24,920
of building a space satellite to the point that

11
00:00:24,940 --> 00:00:27,450
almost anyone can do so.

12
00:00:27,470 --> 00:00:29,660
About the size of a coffee mug and weighing less

13
00:00:29,680 --> 00:00:32,320

than 3 pounds, the total cost of the components

14
00:00:32,340 --> 00:00:36,380
for each PhoneSat satellite is about only $3500.

15
00:00:36,400 --> 00:00:37,740
Bruce Yost: The PhoneSat project is looking

16
00:00:37,760 --> 00:00:40,100
at new and unique ways of building small satellites.

17
00:00:40,120 --> 00:00:41,740
For instance, the team used commercial,

18
00:00:41,760 --> 00:00:44,580
off-the-shelf components, which includes a consumer

19
00:00:44,600 --> 00:00:46,620
smartphone to host the software, as the computing

20
00:00:46,640 --> 00:00:48,640
power for the spacecraft.

21
00:00:48,660 --> 00:00:50,160
Narrator: Smartphones today have more than

22
00:00:50,180 --> 00:00:52,420
100 times the computing power of the average

23
00:00:52,440 --> 00:00:54,990
satellite, with fast processors, high-resolution

24
00:00:55,010 --> 00:00:57,770
cameras, GPS receivers and several radios and

25
00:00:57,790 --> 00:01:00,110
sensors built in.

26
00:01:00,130 --> 00:01:02,630
NASA's prototype smartphone satellite, known as

27
00:01:02,650 --> 00:01:07,370
PhoneSat 1-point-0, is built around the HTC Nexus One.

28
00:01:07,390 --> 00:01:09,710
The team also built a more advanced version called

29
00:01:09,730 --> 00:01:12,710
PhoneSat 2-point-0 that has improved software,

30
00:01:12,730 --> 00:01:16,970
more sensors and is powered by Samsung's Nexus S.

31
00:01:16,990 --> 00:01:18,770
Jasper Wolfe: With a whole array of these satellites,

32
00:01:18,790 --> 00:01:21,340
which is really cheap, you can now do a swarm

33
00:01:21,360 --> 00:01:24,640
of satellites that can take measurement points all over

34
00:01:24,660 --> 00:01:26,620
and you can get really accurate models of the

35
00:01:26,640 --> 00:01:29,780
atmosphere and of other scientific data.

36
00:01:29,800 --> 00:01:31,290
Narrator: Both satellites are scheduled to be sent

37
00:01:31,310 --> 00:01:33,570
into space later this year aboard a rocket

38
00:01:33,590 --> 00:01:36,290

launched from NASA's Wallops Flight Facility at

39
00:01:36,310 --> 00:01:38,820
Wallops Island, Virginia.

40
00:01:38,840 --> 00:01:40,930
Each satellite will broadcast a signal every

41
00:01:40,950 --> 00:01:43,380
30 seconds on the amateur UHF band

42
00:01:43,400 --> 00:01:46,900
at 437.425 megahertz.

43
00:01:46,920 --> 00:01:49,860
Anyone around the world can listen for this signal

44
00:01:49,880 --> 00:01:51,570
and upload what they hear to

45
00:01:51,590 --> 00:01:55,390
phonesat-dot-org