1
00:00:02,828 --> 00:00:04,881
simulation lab. The controller

2
00:00:04,916 --> 00:00:08,491
that goes on the RS-25 engine is

3
00:00:08,526 --> 00:00:11,194
brought here. We test it out, we

4
00:00:11,229 --> 00:00:13,482
test the software out. We make

5
00:00:13,517 --> 00:00:15,002
sure that we can actuate the

6
00:00:15,037 --> 00:00:16,106
valves, we run through flight

7
00:00:16,141 --> 00:00:18,282
profiles. We're able to take

8
00:00:18,317 --> 00:00:21,169
several key functions in the J-2X

9
00:00:21,204 --> 00:00:23,290
controller, the single-board

10
00:00:23,325 --> 00:00:24,762
computer which is truly the brains

11
00:00:24,797 --> 00:00:27,105
of the controller. We're able to

12
00:00:27,140 --> 00:00:29,075
take several different sensor

13
00:00:29,110 --> 00:00:30,778

cards like pressure sensor, temp

14
00:00:30,813 --> 00:00:33,017
sensor, and just directly import

15
00:00:33,052 --> 00:00:35,209
them over to this new RS-25

16
00:00:35,244 --> 00:00:37,497
controller. We're estimating we

17
00:00:37,532 --> 00:00:39,953
can reuse 50 to 60 percent of the

18
00:00:39,988 --> 00:00:42,291
hardware from the J-2X controller

19
00:00:42,326 --> 00:00:44,488
to this new RS-25 controller.

20
00:00:44,523 --> 00:00:46,937
We're concerned about safety number

21
00:00:46,972 --> 00:00:49,081
one. Meeting performance and

22
00:00:49,116 --> 00:00:51,177
reliability, but we're also

23
00:00:51,212 --> 00:00:52,937
concerned about affordability.

24
00:00:52,972 --> 00:00:55,753
We're using new modern standard

25
00:00:55,788 --> 00:00:57,882
processes, we're using different

26
00:00:57,917 --> 00:01:00,753
grade-level parts and ultimately

27
00:01:00,788 --> 00:01:02,329
we're going to get the controller

28
00:01:02,364 --> 00:01:05,081
from what SSME cost to maybe a

29
00:01:05,116 --> 00:01:07,737
third to half of that cost. Our

30
00:01:07,772 --> 00:01:09,921
ultimate goal is to have a

31
00:01:09,956 --> 00:01:12,818
controller that is universal enough

32
00:01:12,853 --> 00:01:15,097
to control multiple rocket engines.

33
00:01:15,132 --> 00:01:17,584
This controller, when we're done,

34
00:01:17,619 --> 00:01:19,745
will be able to control the upper

35
00:01:19,780 --> 00:01:21,929
stage engine, the core stage engine,

36
00:01:21,964 --> 00:01:24,761
an F-1 engine, the RS-68 engine.

37
00:01:24,796 --> 00:01:28,114
It will save money for in the long