1
00:00:00,226 --> 00:00:02,826
>> Please discuss the significance
of the arrival

2
00:00:02,826 --> 00:00:06,126
of the Johannes Kepler automated
transfer vehicle at the station,

3
00:00:06,616 --> 00:00:10,876
and what it will contribute to the ongoing
sustenance of the six-person crew onboard.

4
00:00:12,626 --> 00:00:20,346
>> Let's see, ATV-2, as we like to
refer to it, is a unique vehicle for us

5
00:00:20,346 --> 00:00:24,196
in that it carries an enormous
amount of prop to the ISS.

6
00:00:24,196 --> 00:00:30,246
It will carry -- when it docks, it will have
estimated about four and a half metric tons

7
00:00:30,466 --> 00:00:34,816
of prop that it can burn, and then it
will have almost another metric ton

8
00:00:35,046 --> 00:00:36,846
of prop to transfer to ISS.

9
00:00:37,726 --> 00:00:42,956
And at this point in the station's life,
it's time to raise the altitude of ISS

10
00:00:42,956 --> 00:00:46,206
to over 400 kilometers in order
to reduce drag on the station.

11

00:00:46,906 --> 00:00:52,866
That's always been in the plan, and so this
particular ATV is going to do that job for us.

12
00:00:52,866 --> 00:00:55,556
And that's its primary goal.

13
00:00:55,556 --> 00:01:02,076
In addition to that, it also brings
up about 1600 kilograms of dry cargo,

14
00:01:02,556 --> 00:01:08,366
including crew supplies and
consumables and hardware,

15
00:01:08,366 --> 00:01:10,406
replacement hardware, things of this nature.

16
00:01:11,006 --> 00:01:14,526
And it's part of an integrated
fleet of transfer vehicles

17
00:01:14,526 --> 00:01:17,536
that are bringing a number of items to ISS.

18
00:01:17,536 --> 00:01:25,546
And in fact, this year, we're looking to
increase the onboard consumables, in particular,

19
00:01:25,546 --> 00:01:31,266
in order to have a good supply in the 2012
time frame, when we think we won't have quite

20
00:01:31,266 --> 00:01:34,316
as many vehicles available to the ISS.

21
00:01:34,316 --> 00:01:35,956
So this will help us get over this hump.

22

00:01:36,066 --> 00:01:40,986
In addition to that all that, it also had
about 100 kilograms of oxygen onboard for us.

23
00:01:40,986 --> 00:01:43,236
So it's a critical vehicle for the program.

24
00:01:45,776 --> 00:01:50,876
>> How versatile is the ATV in conducting
full-automated operations in its approach

25
00:01:50,876 --> 00:01:53,906
to the station, and then
to help reboost the complex

26
00:01:53,906 --> 00:01:56,136
to its desired altitude from time to time?

27
00:01:57,296 --> 00:02:01,566
>> Well, of course, I think I've
touched on the second one a bit already.

28
00:02:01,696 --> 00:02:04,466
The vehicle, the ATV vehicle itself is,

29
00:02:04,976 --> 00:02:12,576
from an automated docking standpoint,
is very useful to us, obviously.

30
00:02:12,666 --> 00:02:16,666
It comes to ISS relatively free of commands.

31
00:02:16,666 --> 00:02:19,326
It's a unique free fire in that respect.

32
00:02:19,896 --> 00:02:24,526
And then when it gets close to ISS, of course,
the docking is also automated; however,

33

00:02:24,526 --> 00:02:29,106
the crew can command it to leave is
they see anything that's abnormal,

34
00:02:29,106 --> 00:02:30,676
as the ground can as well.

35
00:02:31,246 --> 00:02:35,596
As a cargo vehicle to ISS,
it's also very versatile.

36
00:02:35,596 --> 00:02:39,806
It carries, as I mentioned earlier,
it carries prop for reboost,

37
00:02:39,806 --> 00:02:42,746
it carries -- it can bring oxygen.

38
00:02:42,746 --> 00:02:43,836
It can bring water.

39
00:02:43,836 --> 00:02:51,666
It can bring a large quantity of dry cargo to
ISS, so it's a very versatile vehicle for us.

40
00:02:52,096 --> 00:02:56,696
>> The first ATV, the Jules Verne,
docked to the station on April 2008,

41
00:02:56,806 --> 00:02:59,246
after a series of demonstrations designed

42
00:02:59,246 --> 00:03:02,186
to test its abort systems and
its rendezvous capability.

43
00:03:03,106 --> 00:03:07,836
This rendezvous will be a direct approach
to the station with no such demonstrations.

44
00:03:08,186 --> 00:03:13,236
How much has the ATV matured in the three years
since its maiden flight, and how important will

45
00:03:13,236 --> 00:03:15,696
that be for future resupply of the station?

46
00:03:16,526 --> 00:03:21,336
>> Well, it's very important, primarily
because the time we spent doing the test

47
00:03:21,336 --> 00:03:28,296
for ATV-1 is a window that you have to include
in the overall time of the approach to ISS.

48
00:03:29,036 --> 00:03:32,966
The closer we can get docking to
the launch, the easier it is for us,

49
00:03:33,436 --> 00:03:38,076
and from the standpoint of
scheduling its activities.

50
00:03:38,616 --> 00:03:44,696
And so, from a maturation standpoint,

51
00:03:44,696 --> 00:03:48,626
ATV-1 performed flawlessly,
those tests that you mentioned.

52
00:03:49,366 --> 00:03:54,086
And that really was a -- if
you will, a verification step.

53
00:03:54,086 --> 00:03:57,926
It was verification testing,
if you will, of the design.

54
00:03:57,926 --> 00:04:04,106

And so just like any design system or any
system that you build that needs to be verified,

55
00:04:04,666 --> 00:04:06,946
it's a step you do, generally, once.

56
00:04:07,236 --> 00:04:10,906
You do a number of tests, but you
generally do them once if they pass,

57
00:04:10,906 --> 00:04:13,426
and ATV passed all those
tests with flying colors,

58
00:04:13,426 --> 00:04:16,406
so there's really no need to repeat them.

59
00:04:17,976 --> 00:04:22,706
>> Finally, please discuss the overall
contribution of the European Space Agency

60
00:04:22,706 --> 00:04:28,586
to the station in terms of science, crewmembers
on board, and the ATV in providing service

61
00:04:28,586 --> 00:04:31,276
to international operations on the station.

62
00:04:31,656 --> 00:04:34,936
And if you can, discuss the
significance of the arrival

63
00:04:34,936 --> 00:04:38,666
of the Johannes Kepler automated
transfer vehicle at the station,

64
00:04:38,666 --> 00:04:43,186
and what it will contribute to the
ongoing sustenance of the station crew.

65
00:04:44,336 --> 00:04:48,036
>> The -- it's really interesting
what's happened over the years

66
00:04:48,296 --> 00:04:52,696
since the partnership was formed,
and we started building the ISS.

67
00:04:52,886 --> 00:04:55,306
In the early years, the US expected

68
00:04:55,306 --> 00:04:59,546
that the shuttle would fly for
the entire life of the ISS.

69
00:04:59,636 --> 00:05:06,266
With the decision to retire the shuttle
and to move on to other systems,

70
00:05:06,686 --> 00:05:12,656
for resupply the ATV has become a
critical part of our capability.

71
00:05:12,786 --> 00:05:17,776
Whereas before, it was important to have,
particularly, the propulsion capability

72
00:05:17,776 --> 00:05:23,836
that it carried, largely it was redundant
to what shuttle could otherwise fly to ISS.

73
00:05:23,906 --> 00:05:30,196
So when the decision was made several years
ago to retire the shuttle, both the ATV

74
00:05:30,196 --> 00:05:36,826
and the Japanese version, the HTV, became
critical parts of our logistics resupply.

75

00:05:36,856 --> 00:05:44,446
And the vehicle that we procure in the
US to supply the ISS supplies, basically,

76
00:05:44,446 --> 00:05:50,796
the balance of what is remaining after
the ATV and the HTV do their function.

77
00:05:51,236 --> 00:05:57,326
So in that sense, it's become critical to
the well being of ISS, and as we evolve ISS

78
00:05:57,326 --> 00:06:02,686
and keep it on orbit for many years,
we will -- the one thing is certain.

79
00:06:02,686 --> 00:06:07,856
We'll have to continue to resupply, and a kit
and consistent resupply chain is mandatory

80
00:06:07,906 --> 00:06:12,836
for the health and well-being
and the utilization of ISS.

81
00:06:13,756 --> 00:06:18,656
And so when people ask the
question what do you think of --

82
00:06:19,506 --> 00:06:24,406
what role does a vehicle like ATV play to ISS,

83
00:06:24,456 --> 00:06:28,496
it's a simple answer, and
it's not being dramatic.

84
00:06:28,496 --> 00:06:35,446
We can't survive without these vehicles, and ATV
is a key part of that, and so for the livelihood

85
00:06:35,446 --> 00:06:40,316

of the ISS, in order to keep six crew
onboard and have them do all the research

86
00:06:40,316 --> 00:06:44,746
that we need them to do with the platform
that we all built in low-earth orbit,

87
00:06:44,746 --> 00:06:49,976
we have to have the ATV there doing
the job that we're relying on it to do.