1
00:00:21,750 --> 00:00:18,790
from outside it looks like a standard

2
00:00:24,710 --> 00:00:21,760
van even the small pie shaped antenna

3
00:00:27,349 --> 00:00:24,720
and cameras on its roof are easy to miss

4
00:00:30,390 --> 00:00:27,359
but inside is specially designed

5
00:00:32,389 --> 00:00:30,400
equipment that revolutionizes method and

6
00:00:35,270 --> 00:00:32,399
greatly enhances management and

7
00:00:38,150 --> 00:00:35,280
maintenance of the nation's highways

8
00:00:40,150 --> 00:00:38,160
using satellite positioning signals

9
00:00:42,549 --> 00:00:40,160
researchers from nasa's center for the

10
00:00:44,869 --> 00:00:42,559
commercial development of space in ohio

11
00:00:48,310 --> 00:00:44,879
are producing highly accurate up-to-date

12
00:00:50,790 --> 00:00:48,320
maps simply by driving the streets

13
00:00:52,950 --> 00:00:50,800

maintaining contact with navigational

14
00:00:55,590 --> 00:00:52,960
satellites makes it possible to

15
00:00:56,869 --> 00:00:55,600
calculate exactly where the van is at

16
00:00:59,590 --> 00:00:56,879
all times

17
00:01:02,470 --> 00:00:59,600
and if the location of the van is known

18
00:01:05,350 --> 00:01:02,480
so is the position of the road it's on

19
00:01:06,789 --> 00:01:05,360
never before has mapping been so easy or

20
00:01:09,270 --> 00:01:06,799
precise

21
00:01:11,910 --> 00:01:09,280
not only is the information accurate and

22
00:01:13,670 --> 00:01:11,920
current it's also in digital form

23
00:01:16,630 --> 00:01:13,680
meaning it can be processed with

24
00:01:18,630 --> 00:01:16,640
computers this is of tremendous value to

25
00:01:20,310 --> 00:01:18,640
government agencies responsible for

26
00:01:22,310 --> 00:01:20,320
managing highways

27
00:01:24,469 --> 00:01:22,320
decisions such as the best route for

28
00:01:26,870 --> 00:01:24,479
hazardous cargo can be made far more

29
00:01:29,109 --> 00:01:26,880
quickly and reliably

30
00:01:31,510 --> 00:01:29,119
until now building an electronic

31
00:01:34,390 --> 00:01:31,520
database to support decision making like

32
00:01:37,429 --> 00:01:34,400
this required digitizing existing paper

33
00:01:39,510 --> 00:01:37,439
maps an expensive time-consuming

34
00:01:41,749 --> 00:01:39,520
imprecise process

35
00:01:43,990 --> 00:01:41,759
and often the maps worked from were over

36
00:01:46,230 --> 00:01:44,000
20 years old

37
00:01:48,230 --> 00:01:46,240
another major benefit of the mobile

38
00:01:50,710 --> 00:01:48,240

mapping system is data that can be

39
00:01:52,389 --> 00:01:50,720
obtained about highway features

40
00:01:56,550 --> 00:01:52,399
project personnel record this

41
00:02:01,590 --> 00:01:59,510
at the same time digital stereo cameras

42
00:02:05,590 --> 00:02:01,600
capture the position and condition of

43
00:02:08,550 --> 00:02:05,600
overpasses signs utility poles guard

44
00:02:10,710 --> 00:02:08,560
rails potholes and any other features

45
00:02:13,510 --> 00:02:10,720
useful to highway planners

46
00:02:15,750 --> 00:02:13,520
project manager philip johnson if you

47
00:02:17,990 --> 00:02:15,760
have all this information in a digital

48
00:02:20,309 --> 00:02:18,000
form and you know that you have a budget

49
00:02:22,390 --> 00:02:20,319
of so many dollars then you can look at

50
00:02:23,430 --> 00:02:22,400
your the roads that are in the worst

51
00:02:26,229 --> 00:02:23,440
condition

52
00:02:28,869 --> 00:02:26,239
you'll know exactly where these sections

53
00:02:30,790 --> 00:02:28,879
are that need repair and then from that

54
00:02:32,710 --> 00:02:30,800
you can determine how to allocate your

55
00:02:34,229 --> 00:02:32,720
money so that you get them the most

56
00:02:36,630 --> 00:02:34,239
benefit from it

57
00:02:39,430 --> 00:02:36,640
the technology can also be transferred

58
00:02:42,470 --> 00:02:39,440
to trains

59
00:02:44,790 --> 00:02:42,480
boats for waterways or aircraft for

60
00:02:47,270 --> 00:02:44,800
larger geographic features

61
00:02:49,830 --> 00:02:47,280
the system could even be part of future

62
00:02:51,270 --> 00:02:49,840
rovers mapping the surface of the moon

63
00:02:53,270 --> 00:02:51,280

on mars

64
00:02:56,150 --> 00:02:53,280
another application is the mapping and

65
00:02:58,710 --> 00:02:56,160
documentation of archaeological sites

66
00:03:01,509 --> 00:02:58,720
including anasazi indian ruins in the

67
00:03:04,390 --> 00:03:01,519
southwestern united states we could take

68
00:03:07,430 --> 00:03:04,400
our system and drive to one of these

69
00:03:09,589 --> 00:03:07,440
ruins take some images of it and not

70
00:03:11,589 --> 00:03:09,599
only would we have its position we'd

71
00:03:13,910 --> 00:03:11,599
have a visual record of it that would be

72
00:03:16,229 --> 00:03:13,920
very valuable in the future

73
00:03:18,390 --> 00:03:16,239
the mobile mapping system

74
00:03:20,790 --> 00:03:18,400
using signals from space

75
00:03:22,229 --> 00:03:20,800
to obtain valuable information about