I'm Rhonda Fleur I'm the Robonaut lead

at the Johnson Space Center Robonaut is

actually a series of robots there's both

the Robonaut one and the robot up to

Robonaut one was originally developed by

NASA in the late 1990s in Robonaut 2 has

been developed over the last few years

by a team of both NASA and General

Motors engineers it is a humanoid robot

designed to help people perform a

variety of tasks that currently other

robots cannot do the goal here is that

there are many tasks that can be more

efficiently offloaded to robots for
example in space when astronauts perform tasks is a lot of setup before the task is actually started and a lot of tear down after the task is done particularly on Space Station setting up the tool setting up a variety of equipment if a robot can perform that task it allows the crew person to be much more efficient doing the things that only a crew person can do starting with our one we went after both the hands and arms they give you a workspace and the decks that's very similar to a human we went to r2 we increase that we increase
the speed at which we could perform

and we increase the level of
dexterity so that we can even perform

more tasks than the original or one can

General Motors was looking just like us

for more options when it comes to mixing

robotic technology and the human

workforce how can they be more efficient

the more options you have both in space

and implant and in an assembly plant the

better the opportunity is to become more

efficient both organizations are looking

for ways to add technology to both of

our toolkits so that both space missions


and assembly plants can be more efficient partnership between NASA and GM has been a fantastic one and it is resulted in benefits that we hadn't predicted when we first started together both sides are looking for as dexterous and is efficient a robotic system is possible but what's also been amazing is the application overlap between the two groups many things that we have to do in space that humans have to do are in many ways similar to the complexity that the situation when you're building a car both are complex activities and we have
found interesting overlap that's been

into the benefit of both of us my name

is Marty Lynn I'm the principal engineer

of robotics for the General Motors

Company General Motors and NASA have a

long history of working together going

back to the original lunar rover and it

would seem like a natural fit for the

General Motors Corporation and NASA to

work together on the development of the

next generation of robots Robonaut the

current Robonaut was developed really as

a result of a partnership between the

NASA Johnson Space Center and General
Motors so General Motors sent down a team of engineers to work side-by-side with the NASA engineers developing and assembling designing and building the current model of Robonaut are two from General Motors perspective we want to be able to automate tasks that are very repetitious dull or organ AMA CLE challenging for our operators and those requirements are very similar to some of the tests that NASA would like to be able automate to help an astronaut so from that perspective we're looking at using robots and automation to support
our operators to support our people

doing the work doing the things that are not as value-added for that for the operators we see the technologies and the things that are developed that make up robo not being used in our assembly plants very shortly we see great benefit to the sensing to the types of controls to the software that's used in Robonaut we see that as being beneficial and we'll be using that very shortly in our assembly plant that NASA Johnson Space Center was really one of the world leaders in
developing robots of this class

101 00:04:29,980 --> 00:04:35,830
it was a natural evolution for us too

102 00:04:33,759 --> 00:04:37,810
and the synergies between the two

103 00:04:35,829 --> 00:04:39,819
organizations is really great the

104 00:04:37,810 --> 00:04:43,300
natural evolution for us to be able to

105 00:04:39,819 --> 00:04:49,569
get together and be able to work on the

106 00:04:43,300 --> 00:04:52,090
latest Robonaut which is our to General

107 00:04:49,569 --> 00:04:54,909
Motors and NASA began working on the

108 00:04:52,089 --> 00:04:57,039
current Robonaut are two about three

109 00:04:54,910 --> 00:04:58,840
years ago the relationship has been

110 00:04:57,040 --> 00:05:01,150
fantastic the partnerships been

111 00:04:58,839 --> 00:05:03,939
fantastic and as you see from the robot

112 00:05:01,149 --> 00:05:06,939
the robots pretty am pretty amazing

113 00:05:03,939 --> 00:05:09,610
device it really we have hit all of the

114 00:05:06,939 --> 00:05:11,649
objectives that we wanted it and with
that we set out to hit when we started

the partnership has been absolutely fantastic we've been able to
dev elop the technologies that we believe are really going to help with the
competitiveness of the General Motors Company as well as the competitiveness of the country robotics are really the
future of our ability as a country to be able to compete in a world marketplace one of GM's core goals is to lead an advanced technology and quality in creating the world's best vehicles

the partnership with NASA and the
development of our to provide those innovative technologies that will help us achieve those goals in both our plants and our products for General Motors is all about safer vehicles and safer plants the technology is being developed in r2 will help our engineers develop advanced vehicle safety systems that will be used in our future products yep