ASIMO started when Honda commissioned a project to analyse human two legged walking and its dynamic motion. It quickly developed into a study of the human anatomy and a challenge to see if certain aspects of human behaviour could be realised in a robot.

Humanoid features:

Self-maintenance (recharging)

Autonomous learning (learns new abilities but needs outside assistance not fully autonomous)

Avoids harmless situations for humans and property

Safe interaction with humans and environment

Powered by a 51.8 lithium ion battery that lasts approximately 1hour per charge. Located in backpack 13pounds

ASIMO is equipped with kinaesthetic 6 axis force sensors that sense both the direction and magnitude of each force placed on the hand, it also has the sensors In its wrist to react to someone’s handshake, and sensors in its legs to detect incline etc. and adjust force needed.

ASIMO is equipped with two cameras in its head. These camera “eyes” allow ASIMO and its operator to view the surrounding environment. These cameras can accurately judge distance from objects by using mathematical formulas and the stereoscopic nature of the cameras. These can detect multiple moving objects and recognise their height distance from ASIMO and speed and direction in which they are travelling. Its cameras can also recognise visual cues i.e. pointing distinguish between faces etc.

Uses gyros and accelerometers in order to maintain a centre of gravity. It also records this in order to react accordingly by twisting its torso if ASIMO begins to lean too much.

Six ultrasonic sensors measure obstacles to a 3m radius centred at ASIMO. This includes glass that the visual sensor cannot detect

It uses a laser sensor located in its stomach to detect any obstacles located on the ground surface 2 metres before its feet.

Infrared sensor measures any floor markings by adjusting its shutter speed to react to the brightness of the room

ASIMO is equipped with five microphones which enables him to receive multiple voice commands simultaneously and react accordingly to each. It can also recognise when its voice is called, turn to face a person talking to it and recognise a falling object or a crash and turn to face it.