Vehicle Speed Signal (VSS)
The VSS is used, by the ECM, to control idle speed and overrun cut off. The ECM receives the signal through a hard wired connection direct from the SLABS ECU.

For vehicles fitted with an automatic gearbox, two vehicle speed signals are received by the ECM. The second signal is derived from the main gearbox output shaft speed, and is sent to the ECM by the Electronic Automatic Transmission (EAT) ECU though the Controller Area Network (CAN). The ECM compares the vehicle speed signal generated by the SLABS ECU with that supplied via the CAN.

The ECM also receives transfer box information. This allows the ECM to take in to account the vehicle being driven using low range gearing and compensate as necessary.

On vehicles with manual transmission, the SLABS signal is checked against a threshold value stored in ECM memory. If other engine parameters indicate the engine is at high load and the VSS is below the threshold, a fault condition is registered in the diagnostic memory.

The vehicle speed signal generated by the SLABS ECU is in the form of a pulse width modulated signal (PWM). Pulses are generated at 8000 per mile, and the frequency of the signal changes in accordance with road speed. At zero road speed the ECU outputs a reference signal at a frequency of 2Hz for diagnostic purposes.

Function
The input signal for the SLABS ECU is measured via pin 22 of connector C0637 of the ECM. The SLABS ECU generates a PWM signal switching between 0 and 12 volts at a frequency of 8000 pulses per mile. For vehicles with automatic gearbox the input signal for the EAT ECU is measured via pins 36 and 37 of connector C0637 of the ECM. These pin numbers provide a bi-directional communications link using the CAN data bus.

In the case of a VSS failure on vehicles with automatic gearboxes, the ECM applies default values derived from the EAT ECU. There are no default values for manual gearbox vehicles.

The VSS can fail in the following ways:
- Wiring short circuit to vehicle supply.
- Wiring short circuit to vehicle earth.
- Wiring open circuit.

In the event of a VSS failure, any of the following symptoms may be observed:
- MIL illuminated after 2 driving cycles (NAS only).
- Vehicle speed limiting disabled (manual transmission vehicles only).
- SLABS/HDC warning lamp on and audible warning.

Should a malfunction of the component occur the following fault codes may be evident and can be retrieved by TestBook:

P Code	J2012 Description	Land Rover Description
P0500	Vehicle speed sensor malfunction	VSS short or open circuit
P0501	Vehicle speed sensor range/performance	VSS implausible

Rough road signal
When the vehicle travels across rough terrain, or on rough roads instability becomes evident in the drive train. The ECM could interpret these vibrations as a 'false misfire'. To counteract this 'false misfire' the SLABS ECU generates a rough road signal, sends it to the ECM so that the ECM can suspend misfire detection for as long as the vehicle is travelling on the 'rough road'.