# Job Description.

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| **Title of Job:** | Senior Multibody Simulation Engineer |
| **Department:** | 0432 Driven Attributes |
| **Grade:** | 4Y |
| **Location:** | Nuneaton |
| **Responsible To:** | Team Leader and Department Manager |
| **Subordinates:** | n/a |

## Main Purpose of Job

- Undertake modelling and analysis activities using MSC Adams Car software to support component and vehicle design and development
- Build and analyse MSC Adams Car vehicle, subsystem and test rig models
- Undertake and report the assessment of vehicle dynamics, NVH and durability attributes
- Generate load data to support FE and fatigue analysis in vehicle design and development programmes
- Support ad-hoc requests in support of design and attribute engineering colleagues

## Key Functions

- Proficient user of MSC Adams with extensive experience using Adams Car in an automotive consultancy or manufacturer with 5+ years of experience as a Simulation Engineer within the automotive industry
- Application of multi-body simulation tools in multiple vehicle types (eg passenger vehicles, commercial vehicles, tracked vehicles)
- Good understanding of vehicle dynamics attribute - Experience of K&C and full vehicle handling, steering and ride analysis
- Experience of using virtual tools for at least two of the following topics:
    - K&C suspension model correlation to test data and optimisation towards targets
    - Model correlation and optimisation in full vehicle level to improve vehicle dynamics
    - Chassis vibration/modal analysis for NVH characterisation and optimisation to achieve desired modal alignment and to reduce structure borne and road noise
    - Powertrain vibration/modal analysis for NVH characterisation and optimisation to achieve desired modal alignment in full operating envelope
    - Durability analysis and load extraction using Road Load Data
    - Durability analysis and load extraction using scanned road surfaces along with analytical tyre model, such as FTire
- Experience of real time simulation software packages such as VI-CarRealTime or IPG/CarMaker with a focus on generating models for application in a driver in the loop simulator.
- Proficient understanding and application of MATLAB and Simulink
- Familiar with CAD and FEA software used within the industry
- Participation in major vehicle development programmes
- Understanding of active chassis systems
- Report writing – confident in ability to interpret and post process results and make recommendations, written and verbal.
- Direct interaction and good communication skills with customers

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| • Taking responsibility for delivery of programmes of work within time and budget constraints |
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| Essential Qualifications | Preferred Qualifications |
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| • Engineering degree in appropriate discipline (ie Mechanical or Automotive Engineering or a similar scope) | • Chartered Engineer, CEng MIMechE or equivalent |

| Essential Experience | Preferred Experience |
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| • 5+ years of experience as a Multibody Simulation Engineer<br>• Working for an OEM, tier one suspension supplier or an automotive consultancy | • 7+ years of experience as an Multibody Simulation Engineer<br>• Working for an OEM, tier one suspension supplier or an automotive consultancy<br>• Application of real time models for driver in the loop simulators |

| What is the candidate likely to be doing now? |
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| • Working for an OEM or analysis consultancy and using MSC Adams and complementary tools and techniques on a daily basis |

| Other information |
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| • The successful candidate will be taking part in a multi-facetted team of simulation specialists applying a range of techniques to problem solving and to vehicle development. They will have demonstrated the ability to work independently and flexibly while remaining a team player and being open to support ad-hoc analysis requests in support of colleagues. |