

## Training simulation of the manipulator vehicle tEODor for Explosive Ordnance Disposal (EOD) and Improvised Explosive Device Disposal (IEDD)

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The simulation of manipulator vehicles is a challenge in the field of EOD and IED disposal training. The focus in such vehicle simulations is to reproduce the behaviour of the vehicle in terms of control and movement and also to simulate interactions with the environment in order to prepare the user for real operations. In this contribution an approach has been presented to ensure the quality of the implemented robot simulation for IED disposal training purposes. It could be shown that the simulation behaviour and the real performance of the robot have a very strong correlation.

### Simulation and Forecasting Technology role

Training, modelling behaviour of vehicles.

### Sector

Aerospace and Defence

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**Kinematic model**

The velocity of the vehicle depends mainly on two factors, the physical engine power and the interaction of the robot with the surface on which it is operating. The engine power was specified by the manufacturer and the contact parameters were adjusted according to the materials. The driving characteristic of the robot is listed in Table 1.

Robot Speed driving	Real (sec)	Virtual (sec)
	6.3	6.3

**Training Simulation of the Manipulator Vehicle tEODor for Explosive Ordnance Disposal (EOD) and Improvised Explosive Device Disposal (IEDD)**

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**Abstract**

The simulation of manipulator vehicles is a challenge in the field of EOD and IED disposal training. The focus in such vehicle simulations is to reproduce the behavior of the vehicle in terms of control and movement and also to simulate interactions with the environment in order to prepare the user for real operations. In this contribution an approach will be presented to ensure the quality of the implemented robot simulation for IED disposal training purposes.

**Classification:**  
I.2.9, I.6.1., J2

**Keywords:**  
Explosive Ordnance Disposal, Improvised Explosive Device, Evaluation, Robotics Simulation, Physics Engine, Interactive Environment