



## THE LEADING MOTION ANALYSIS SOFTWARE SUITE

TEMA is the market-leading software suite for advanced Motion Analysis for Defence applications and testing. Thanks to its high accuracy, modular structure, process speed and intuitive user interface - TEMA is used by Defence industry and professionals across the globe in a wide range of applications. Users are able to import image sequences and automatically track any given object throughout the sequence via a set of proprietary tracking algorithms. The result is presented in predefined formats such as tables and graphs showing quantifiable values such as position, speed and acceleration over time.

### MUNITIONS

Measure the position, speed, acceleration, impact angles, 3D ballistics, impact behaviour, bullet dispersion.

### EXPLOSIVES

Analyse shock wave propagation, fragmentation effects, secondary effects, circumferences, shrapnel and splinter dynamics and characterisation.

### AIR PLATFORMS

Investigate wing deflections, flight behaviours, landing gear dynamics, impact effects, 6DOF of stores.

### SMALL ARMS

Investigate the gun stabilisation performance, frequencies, 6DoF dynamics and load mechanism behaviour.

### GUNS

Analyse the gun stabilisation performance, frequencies, 6DoF dynamics and load mechanism behaviour.

### LAND PLATFORMS

Measure platform dynamics and stabilisation performance, vehicle behaviour, active defence system efficiency.

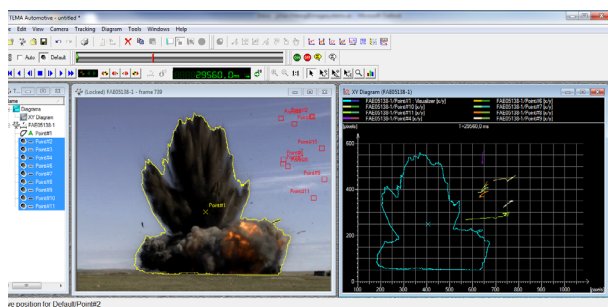
### USING TEMA

From loading an image sequence, executing the tracking algorithms, applying the chosen analytics and logic, to presenting the derived data - TEMA offers a straightforward workflow. Menu bars, tool bars and key bindings all provide a easy access to features and functions.

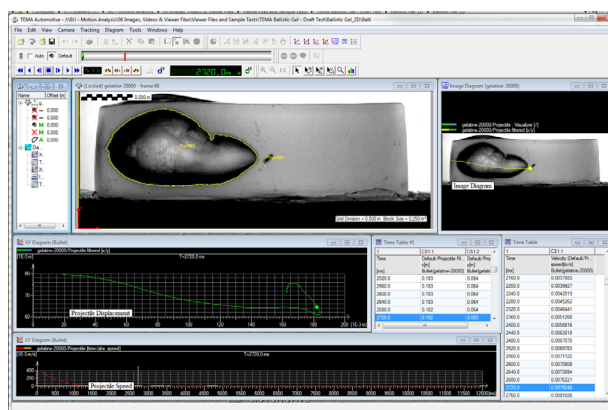
The user interface is fully synchronized: any change of parameters or set-up will directly effect all parts of the tracking session, updating results, graphs and tables.

### ADVANCED FUNCTIONALITY

The operator has full control of the tracking in TEMA with many options and possibilities to tailor TEMA to specific applications and needs.



Single shrapnel are tracked as well as the actual explosion dynamics. Using witnessplates around the area will effectively give information about shrapnel size, speed and density.

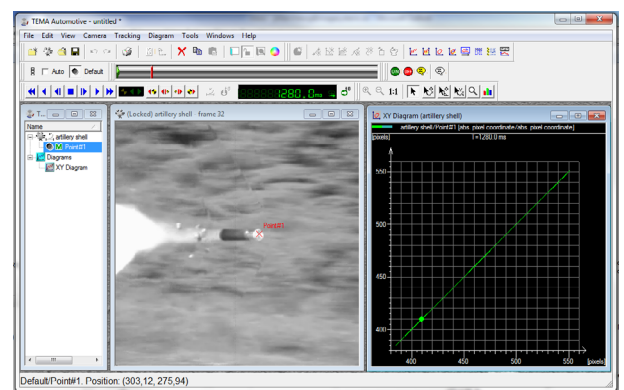


TEMA is used to calculate the rotational volume of the cavity created by the bullet fired into the gelatine. Other parameters such as speed, acceleration, bullet orientation are also analysed.

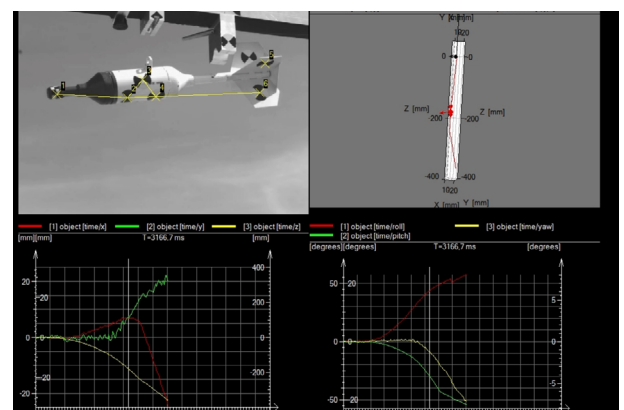
TEMA has a very powerful set of different tracking algorithms available such as Correlation, Quad, Center of Gravity, Outline etc. By using the integrated lens calibration tool, data accuracy can be kept at a maximum and the results are traceable.

Tracking can be analyzed in multiple dimensions (2D, 3D and 6DoF). TEMA 3D technology allows for unparalleled rapid calibration of cameras for 3D-Motion Analysis tests.

Our proprietary TEMA Static survey technology allows both to map the testenvironment in order to create a common coordinate system using multiple cameras as well as to do 6DoF Motion Analysis of a rigid body using a single camera.



TEMA is used to detect pitch and yaw of this artillery round, as well as speed and acceleration.



You can use the TEMA Defence software suite to properly calculate the x, y, z coordinates of the object as well as roll, pitch and yaw. The result is presented in graphs and numerical tables.