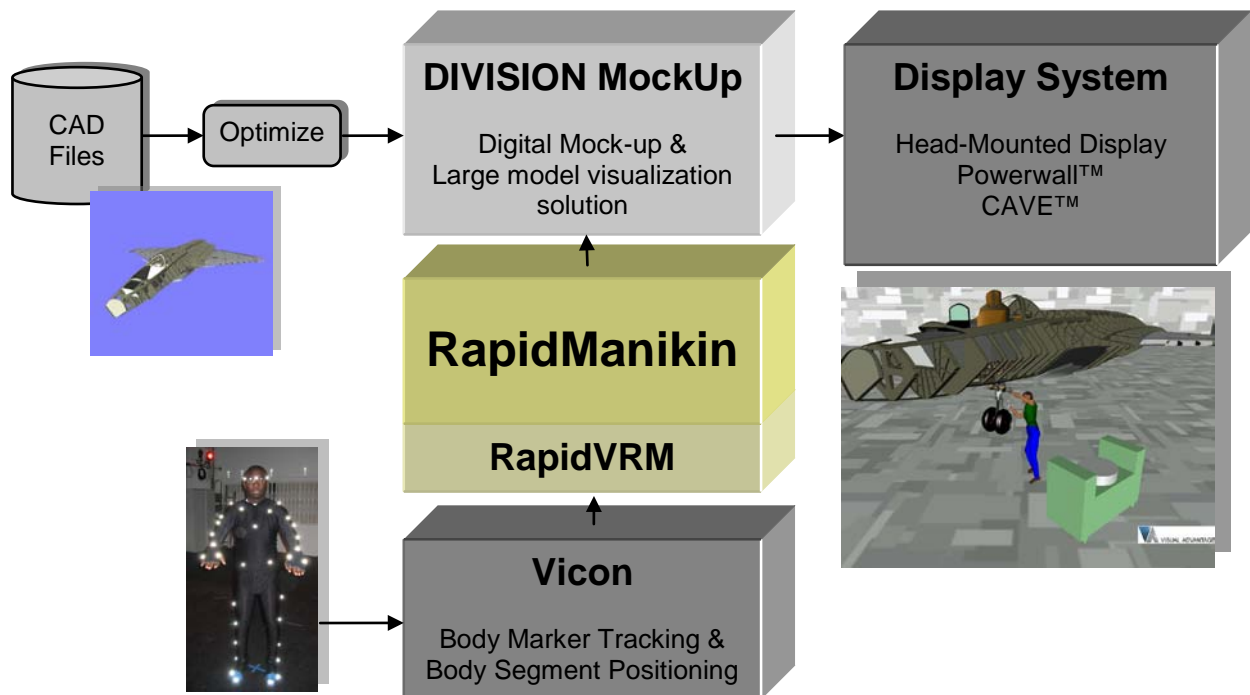


RapidManikin™

Components & Configurations

integrating best in class components

The RapidManikin™ solution is comprised of a number of key components which can in themselves be used for individual purposes and yet when tightly integrated form a powerful full-body tracking solution for engineering design analysis, review, and presentation.



DIVISION® MockUp

MockUp™ is a state-of-the-art visualization and digital mock-up solution used widely across many manufacturing industries to assess the integration and operation of complex mechanical designs and to perform various human factors studies. It has unique capabilities for loading and interacting with very large engineering models and to analyse them for form and function in real-time. Real-time tools such as the collision detection engine combined with interactive animation sequences and behaviors allow 'what if' scenarios to be checked quickly. Its ability to effectively optimise and import large CAD models from a range of different formats provides this solution with considerable flexibility.

MockUp can also be networked so multiple users, maybe several fully tracked bodies, could be connected in real-time to share and interact with one engineering model. Normally, each immersed users would have their own MockUp session to drive their individual graphics displays. Please see [MockUp-VR](#) for further information.

Vicon

The Vicon system is the most advanced optical motion capture system available, delivering fantastic precision, performance and practicality. Up to 5 bodies can be fully tracked in real-time, each with typically about 25 body segments, at rates of up to 2000Hz. The RapidManikin solution doesn't need this update rate but the capability ensures that frame-rates and accuracy are not compromised. Using high resolution cameras it is also possible to accurately track finger movement. The system is portable.

The cameras may operate with visible, near infrared or infrared light sources. In cases where open projection systems are used, for instance a CAVE™, near-infrared is usually most suitable as it provides excellent range and a high degree of tracking accuracy with almost no visible light.

The major components of a Vicon system are the cameras, the controlling hardware, and the software to manage the data in real-time. The MX system is flexible, expandable, and easy to integrate, so additional capabilities such as additional cameras can be easily added, as and when necessary. Please see [Vicon Peak](#) for further information.

Tracking integration

Tracking integration for DIVISION MockUp is provided by RapidVRM™. RapidVRM in itself is a general tracking capability that integrates a product called Trackd to provide tracking services and immersive user functions for MockUp users. It supports a wide range of general tracking systems and input devices and can be configured to support many concurrently.

Through one RapidVRM interface Vicon MX may support several users, although for display purposes multiple copies of MockUp may be required. Please see [RapidVRM](#) for further information.

Display systems

A range of display systems could be used, although a stereo image combined with a wide field of view is normally required. Typical display systems will include:

Head Mounted Displays: These devices provide a stereo image for the immersed user. They have great flexibility since the user can look wherever they wish, yet there are constraints in weight, resolution, and field of view.

Stereo projections with head tracking: It is possible to provide a high quality stereo image that is projected on to a flat wall, tracking the user's viewpoint to provide the correct image perspective at any time. The resolution can be good although the user will not be immersed when looking off screen.

Cubic projection systems: These systems provide a stereo projection on to a number of walls to allow an immersed user to see a high resolution image yet remain immersed with a wider field of view.

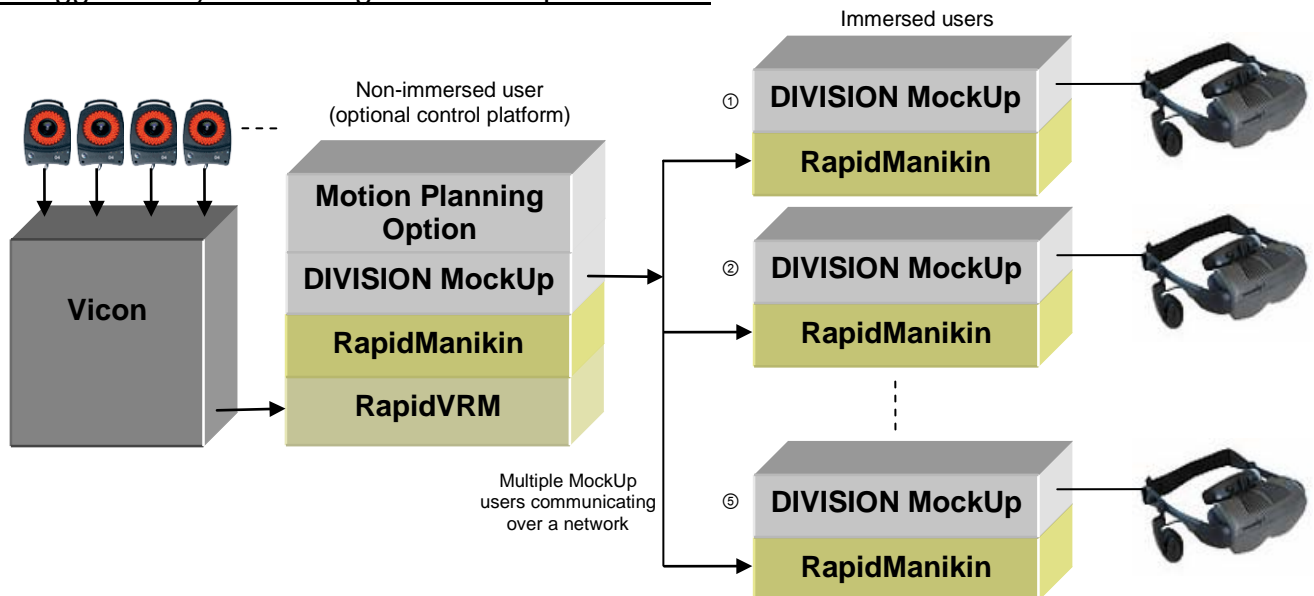
Graphics and compute hardware

The graphics and workstation industries are constantly changing. For the latest options and recommendations please contact Visual Advantage International Ltd.

RapidManikin™

This document is defined to provide information in addition to the main RapidManikin brochure. Please see [RapidManikin](#) for further information.

A suggested system configuration for up to 5 users



About Visual Advantage

Visual Advantage has had extensive experience with DIVISION and PTC products over the past 15 years. We offer an extensive range of products and services to extend the functionality and performance of the MockUp product for clients who aim to realise its full potential. Visual Advantage is a PTC PartnerAdvantage™ Gold level member.

Please contact us for further information >>

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