animazoo

the future of motion capture

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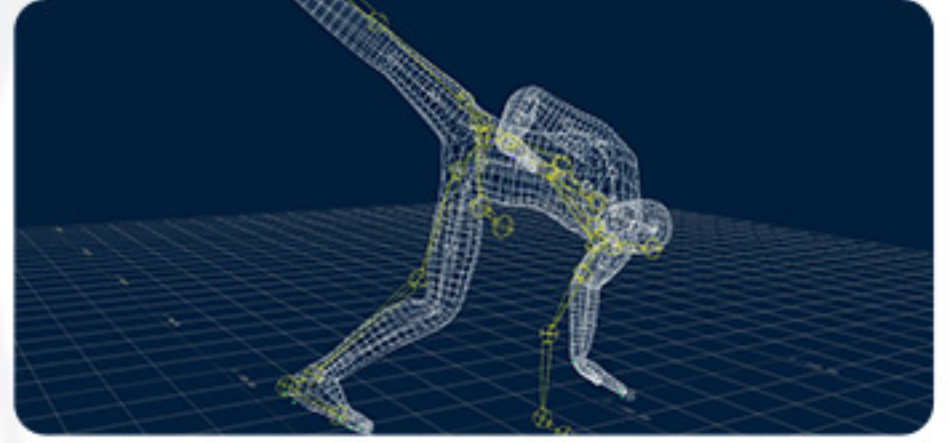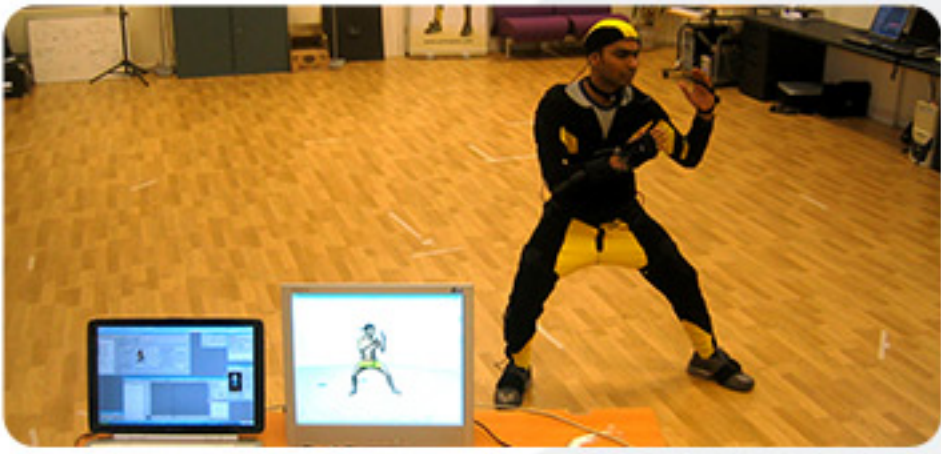
About Animazoo

Animazoo is the world's leading manufacturer of inertial motion capture systems.

Based in Brighton, UK Animazoo's head office contains both administration and manufacturing departments. All Animazoo systems are assembled and tested by UK qualified engineers ensuring quality and performance.

As of January 2010 Animazoo has a client base of over 250 companies using our award winning motion capture systems across 43 different countries. At present Animazoo manufactures both electromechanical inertial systems and gyroscopic inertial systems.

20 Years of Experience

Over the past 20 years Animazoo has been setting industry firsts.

The award winning Gypsy range of electromechanical systems introduced the world to portable, occlusion free, camera-less motion capture in the mid 90's.

In 2004 Animazoo released the first commercial inertial motion capture system to use gyroscopic sensors on body limbs. The Gypsy Gyro 18 raised the bar for modern motion capture.

Our current systems are the Gypsy 6 range of electromechanical inertial systems and the IGS range which has superseded the Gypsy Gyro 18 with even higher accuracy and comprehensive workings.

A network of global distributors in all continents make it easy to purchase and maintain an Animazoo system anywhere in the world.

IGS-190-M

The Animazoo IGS-190-M is the 9th version of the world's first inertial gyroscopic motion capture system. Easy to use, outstandingly accurate, portable and real-time, the IGS-190-M is precision motion capture at its finest.

The IGS-190-M features nineteen tiny inertial sensors attached to a flexible lycra suit. The gyros are moveable for optimum placement ensuring accuracy of measurement from the joint and not the muscle.

Tech Specs

Setup Time	15 Minutes
Time to put on Sensor Suit	5 Minutes
System Boot to Capture	Under 7 Minutes
System Weight No Battery	2 Kg
Actor Size & Weight Range	Unlimited
Suit Material	Lycra
Shipping Weight	16 Kg
Shipping Size	56cmx46cmx27cm
Inertial Gyroscopes	19 (20x25x35mm)
No. of Joints/Rotations Sensed	19
Optional Programmable Switches	6 Digital
Sensor Resolution	0.01 degree
Post Artifact Resolution	1 degree
Sensor Calibration	Delivered Calibrated
Gyro Speed	1200°/sec

Movement Through Walls

The IGS-190-M has an enormous capture area with a range of up to 200m radius, made possible by its military grade radio transmitter. Its transmission is so strong it can capture movement through walls.

Wireless Range	Up to 200m
Simultaneous Wireless Actors	16
Operating Environment	Dry 0-40°c
Ability to Roam	Unlimited
Spread Spectrum	Resumes after interruption

Natural Movement

The IGS-190-M can be used in most environments, even in spaces where magnetic interference can render other systems useless. It doesn't require cameras or markers, so it is completely free from occlusion or marker sampling. Your subject's position in space is provided via a patented foot anchoring system which results in clean, natural movements.

Magnetic Interference	Minimal (Compensation software included)
Occlusion / Marker Swapping	None
Global Translation Sensing	Yes - Calculated
Optional Prop Channels	1
Partial Use	Can be used with 1 to 19 gyros
Captured Frames/Second	15/30/60/120

Software

The IGS-190-M requires only standard system capabilities and its software integrates with all major animation and biomechanical analysis software.

System Requirements	P3 or higher, 256 RAM
User Operating System	XP, Vista, Windows 7 (32 bit)

Power

The system is powered by a rechargeable battery pack allowing it to be used without mains power. The pack provides up to 3 hours capture and can be changed during usage without loss of data.

Batteries Supplied	NiMH rechargeable pack
Battery Run Time	3 hrs (per pack)
DC Input	9.6v

Warranty

Assembled in the United Kingdom, the IGS-190-M comes complete with 12 months parts and labour warranty, free software, free phone and email support. The system is so intuitive, minimal training is required.

Warranty	12 months parts and labour
Software Upgrades	Free for 12 months
Phone & Email Support	Free for 12 months

IGS-190-Hybrid

Whilst gyroscopes on the IGS-190-M provide rotational data, complex algorithms within the Animazoo software provide positional data based on footstep calculations. This is extremely accurate for one IGS-190-M but when using two together a drift can occur between them and result in extra post processing and clean up.

To solve this issue Animazoo introduced ExacTrax in 2008; an ultrasonic tracking system which provides absolute global position (as opposed to calculated global position) to each IGS-190-M system. Positional data can easily be merged with rotational data during post processing within Animazoo's patented Editing Suite.

This revolutionary system provides clean and accurate inertial data for up to 4 suits captured simultaneously.
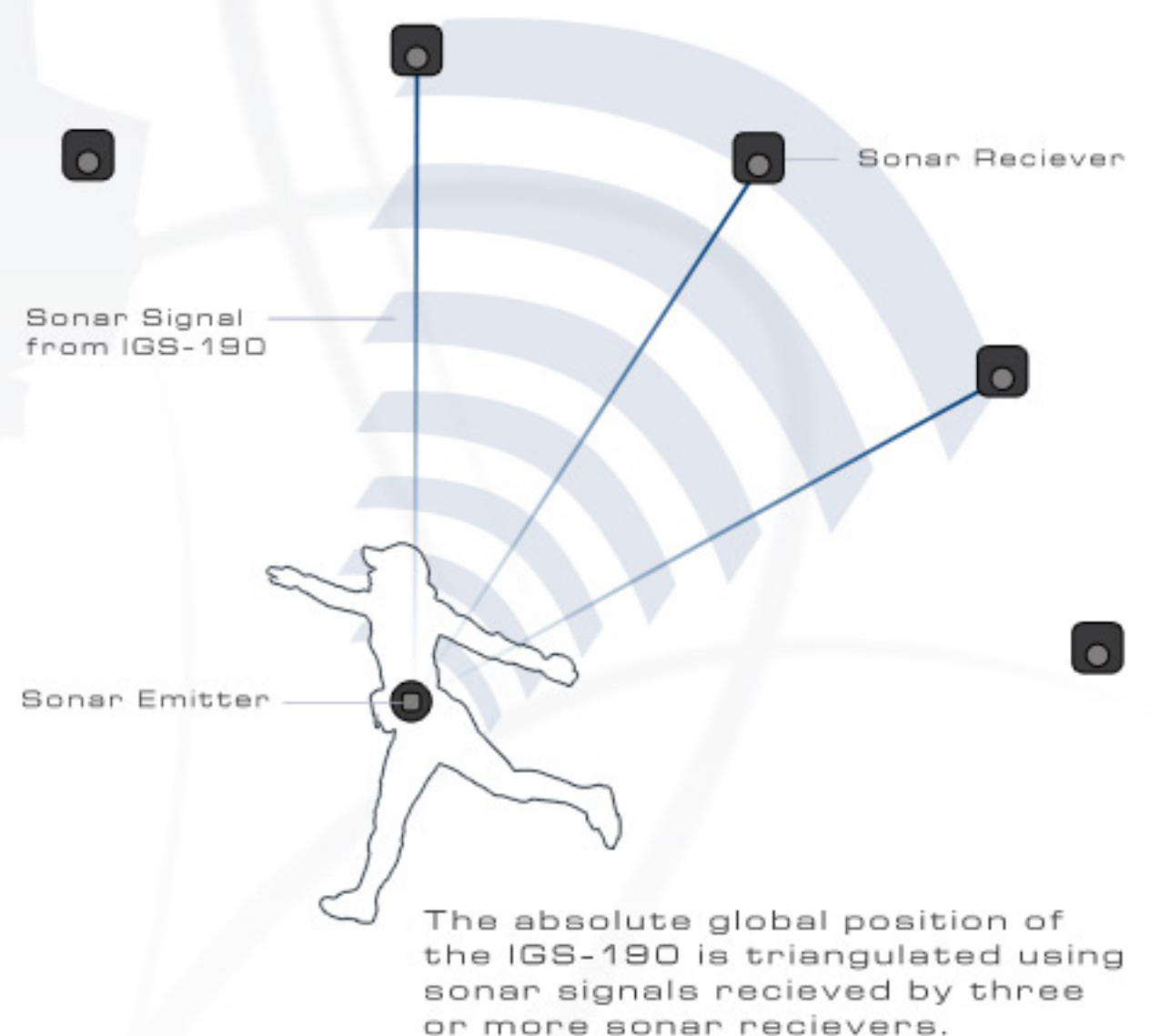
ExacTrax

ExacTrax is made up of a number of Sonar Processing Units (SPU). Each SPU controls 4 microphones. By strategic positioning of each microphone a capture area can be created.

The more SPUs and microphones, the larger the capture area can be.

An ultrasonic emitter fitted to the IGS-190-M main processing unit transmits an ultrasonic pulse which is detected by the microphones and triangulates the emitter's global position. This is much like the reflective markers of an optical motion capture system being detected by cameras.

The Animazoo IGS-190 Hybrid does not suffer from sonar occlusion. If the emitter is occluded the data from the IGS-190-M takes over. This also happens if the actor happens to walk out of the capture area.

Sonar Reciever

Sonar Signal from IGS-190

Sonar Emitter

The absolute global position of the IGS-190 is triangulated using sonar signals recieved by three or more sonar recievers.

Hybrid Systems

Single IGS-190-Hybrid

A 20 sonar sensor is coupled to a single IGS-190-M to make an IGS-190-H which comprises of:

    1 x IGS-190-M
    5 x SPU (20 Microphones + 4 spare)
    3 x Sonar Emitter (1 operational + 2 spare)
    1 x Operating PC (including operating software)
    Cabling for typical 6m x 6m capture area.

Double IGS-190-Hybrid

For multi person capture an 8 SPU studio package is available which contains the following:

    2x IGS-190-M
    8 x SPU (32 Microphones + 4 spare)
    4 x Sonar Emitter (2 operational + 2 spare)
    1 x Operating PC (including operating software)
    Cabling for typical 8m x 8m capture area.

Please note that a extra operating PC or Laptop is required for multi person simultaneous capture.

IGS-Mini Hybrid

For integration with IGS-30 and IGS-40 systems a single SPU package is available which contains the following

    1 x IGS-Mini (IGS-30/40)
    1 x SPU (4 Microphones + 1 spare)
    3 x Sonar Emitter (1 operational + 2 spare)

Please note that for 360 degrees of capture, microphones may need to be fitted to ceiling.

IGS Mini

The IGS Mini systems are configured to measure localized movements of joints or limbs and are ideal for researchers when specific areas of body movement need to be analysed without the need for a full body capture system.

IGS Mini systems are available in a number of configurations for example:

**IGS-30**: a 3-gyro configuration ideal for measuring the rotations of a subjects arm.

IGS-40: a 4-gyro configuration ideal for measuring the rotation of a subjects leg.

IGS-70: a 7-gyro configuration ideal for measuring the lower half of a subjects body.

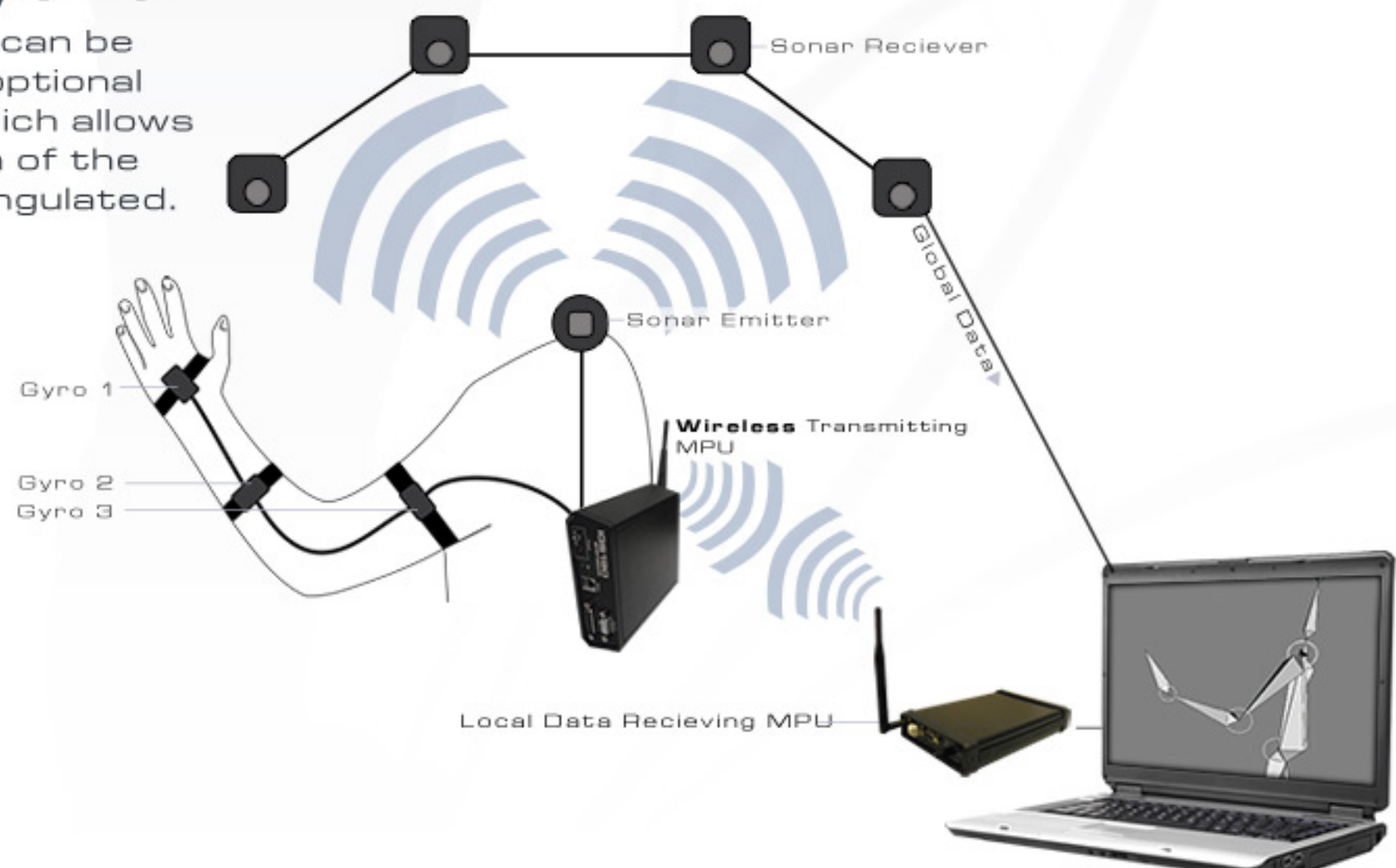**IGS-120**: a 12-gyro configuration ideal for measuring the upper half/torso of a subject.

Example Configurations

IGS-30

Gyro 1
Gyro 2
Gyro 3
Wireless Transmitting MPU
Local Data Recieving MPU
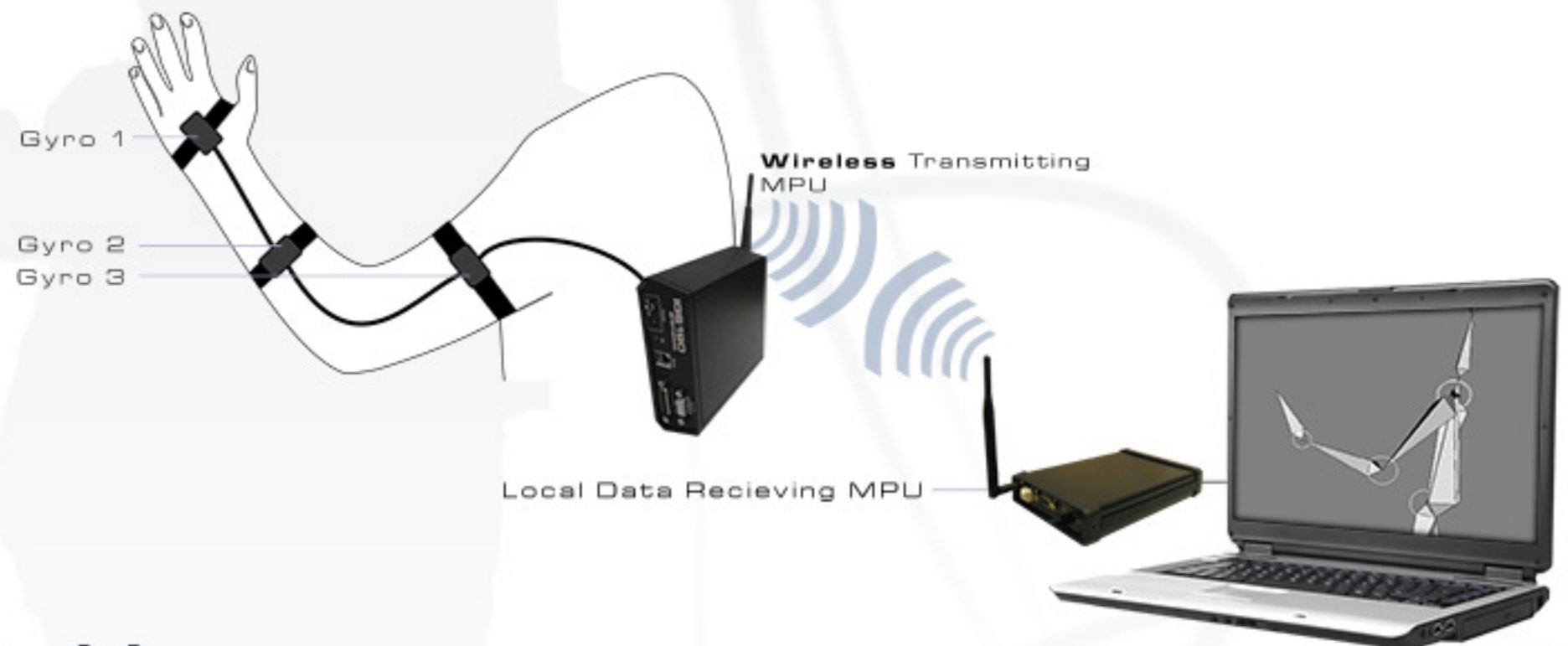
IGS-30 Hybrid

IGS Mini systems can be provided with an optional sonar upgrade which allows the global position of the subject to be triangulated.

Sonar Reciever
Sonar Emitter
Global Data
Gyro 1
Gyro 2
Gyro 3
Wireless Transmitting MPU
Local Data Recieving MPU

Note: IGS-30 and IGS-40 come with 2 sets of sensors for either upper body or lower body capture

Gypsy-6

The Gypsy-6 is the latest generation of award-winning electromechanical mocap from Animazoo. A great tool for animators, educators and researchers. It is also ideal for teaching the concept of motion capture.

Weighing just 6kg, it is adjustable in size to fit most people. Its portability together with wireless operation and large capture area make it ideal for live events or on location capture.

Tech Specs

|	
Setup Time	10 Minutes
Time to put on Sensor Suit	5 Minutes
System Boot to Capture	Under 3 Minutes
System Weight	6 Kg
Actor Size Range	Height 150 - 190cm
Suit Material	Plastic, Aluminium, Foam
Shipping Weight	25 Kg
Shipping Size	75cmx50cmx50cm
Potentiometers	33
Inertial Gyroscopes	2
No. Joints / Rotations Sensed	16 / 39
Optional Programmable Switches	6 Digital
Sensor Resolution	0.125 degree
Post Artifact Resolution	±3 degree
Sensor Calibration	Delivered Calibrated

Capture Range

The Gypsy-6 has an enormous capture area with a range of up to 200m radius.

Wireless Range	Up to 200m
Simultaneous Wireless Actors	8
Operating Environment	Dry 0-40°c

Natural Movement

The Gypsy-6 can be used in most environments, even in spaces where magnetic interference can render other systems useless. It doesn't require cameras or markers, so is completely free from occlusion and marker solving. Your subject's position in space is calculated with trigonometry, calculating the distance travelled from the initial frame in each footstep

Magnetic Interference	None
Occlusion / Marker Swapping	None
Global Translation Sensing	Yes- Calculated
Captured Frames/Second	30/60/120
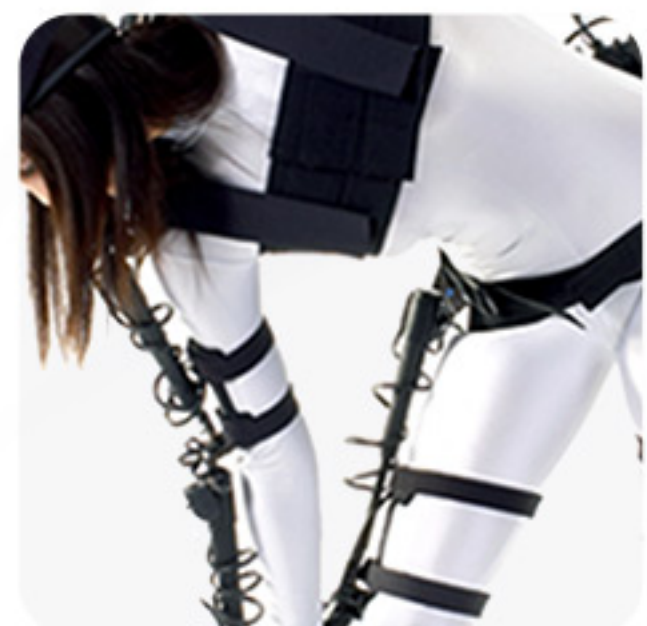
Software

The Gypsy-6 requires only standard system capabilities and its software integrates with all major animation and biomechanical analysis software.

System Requirements	P3 or higher, 256 RAM
User Operating System	XP, Vista, Windows 7 (32bit)

Power

The system is powered by a rechargeable battery pack allowing it to be used without mains power. The pack provides up to 3 hours capture and can be changed during a session without having to reset the equiptment or software.

Batteries Supplied	NiMH rechargeable pack
Battery Run Time	3 hrs (per pack)
DC Input	7.2 to 9.6v

Warranty

Assembled in the United Kingdom, the Gypsy-6 comes complete with 12 months parts and labour warranty, free software, free phone and email support. The system is so intuitive, minimal training is required.

Warranty	12 months parts and labour
Software Upgrades	Free for 12 months
Phone & Email Support	Free for 12 months

Animazoo Operating Software

AnimaView

Giving the option to record in 30/60/120 FPS AnimaView is a comprehensive Graphci User Interface which displays data on a real-time skeleton within a 3D environment. Within AnimaView data can be recorded and played back in full 360 degrees giving the director a powerful pre-visualization tool.

Animazoo Editing Suite

The Animazoo Editing Suite has been designed to quickly and effectively modify data during post processing

Functions include:

AutoCal - Joint offsetting program ensuring correct geometry of the user's skeleton

Auto Cleaning – Point and click cleanup function and post processing option.

Keyframe Editor - Allows manipulation of data elements such as velocity, positions, vectors, contact point and jump trajectories, step and artifact correction. The Keyframe Editor gives the animator total control over every movement in the data during post processing.

Data Streaming

Animazoo software version 9 includes our revolutionary data streaming function. Motion capture data can be sent in real time across the internet allowing remote viewing of your capture sessions. Remote users can record and direct the session from anywhere in the world but the data may only be saved to the computer operating the capture suit.

Data Formats

Data can be recorded in BVH, AN and text as well as recording from inside MotionBuilder which saves in FBX. The BVH format is compatible with both MotionBuilder, 3d Studio Max and other major animation software titles.
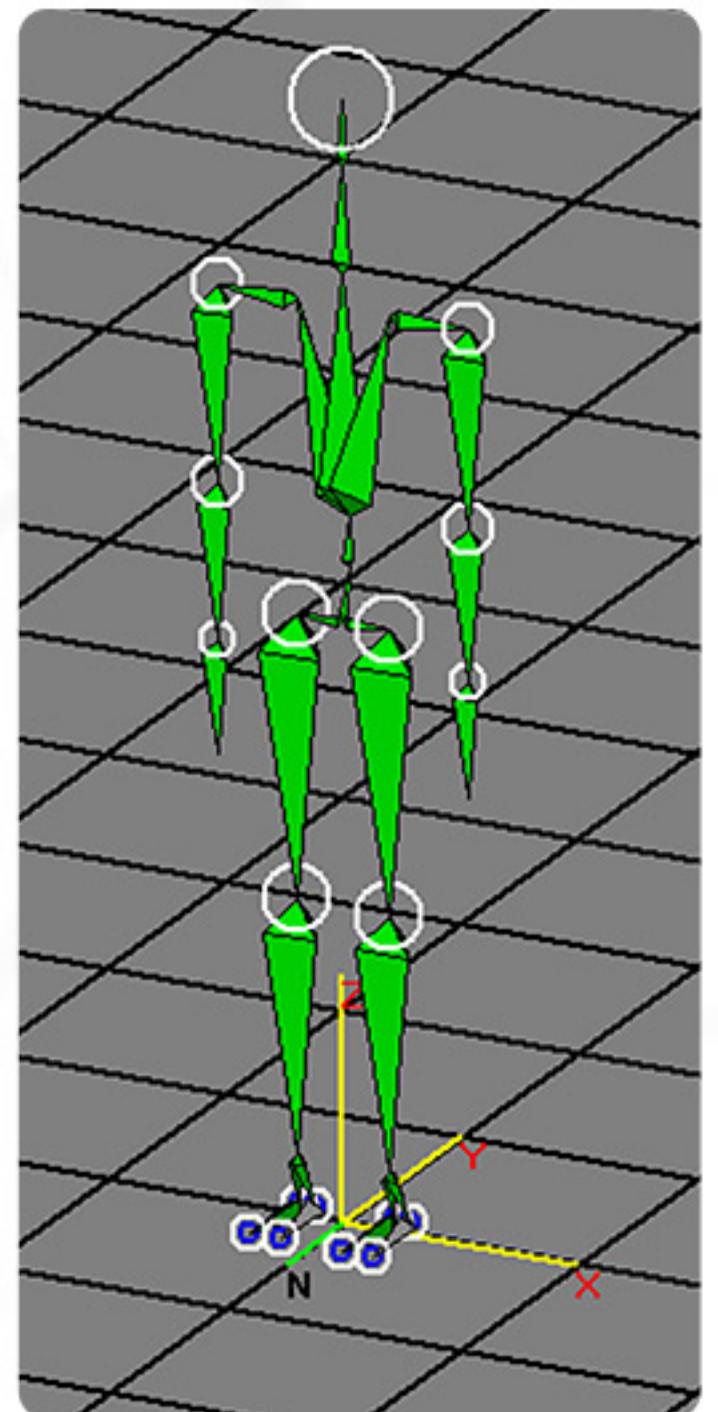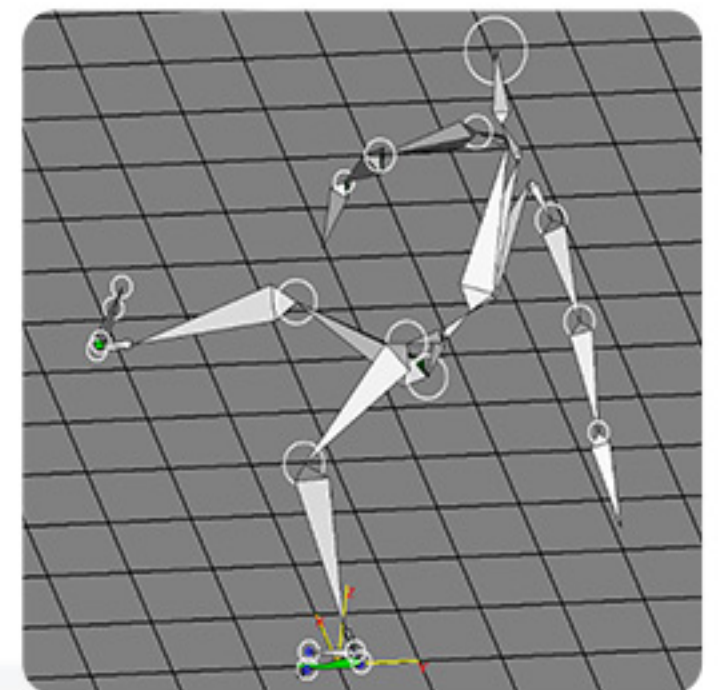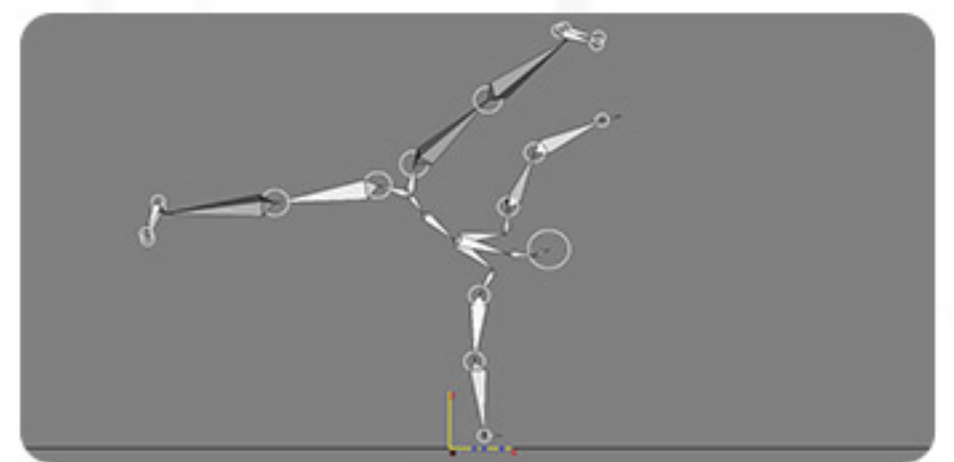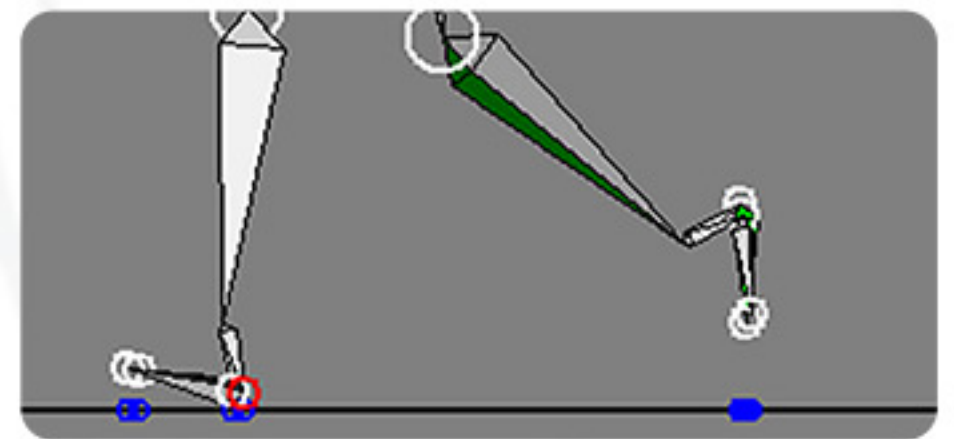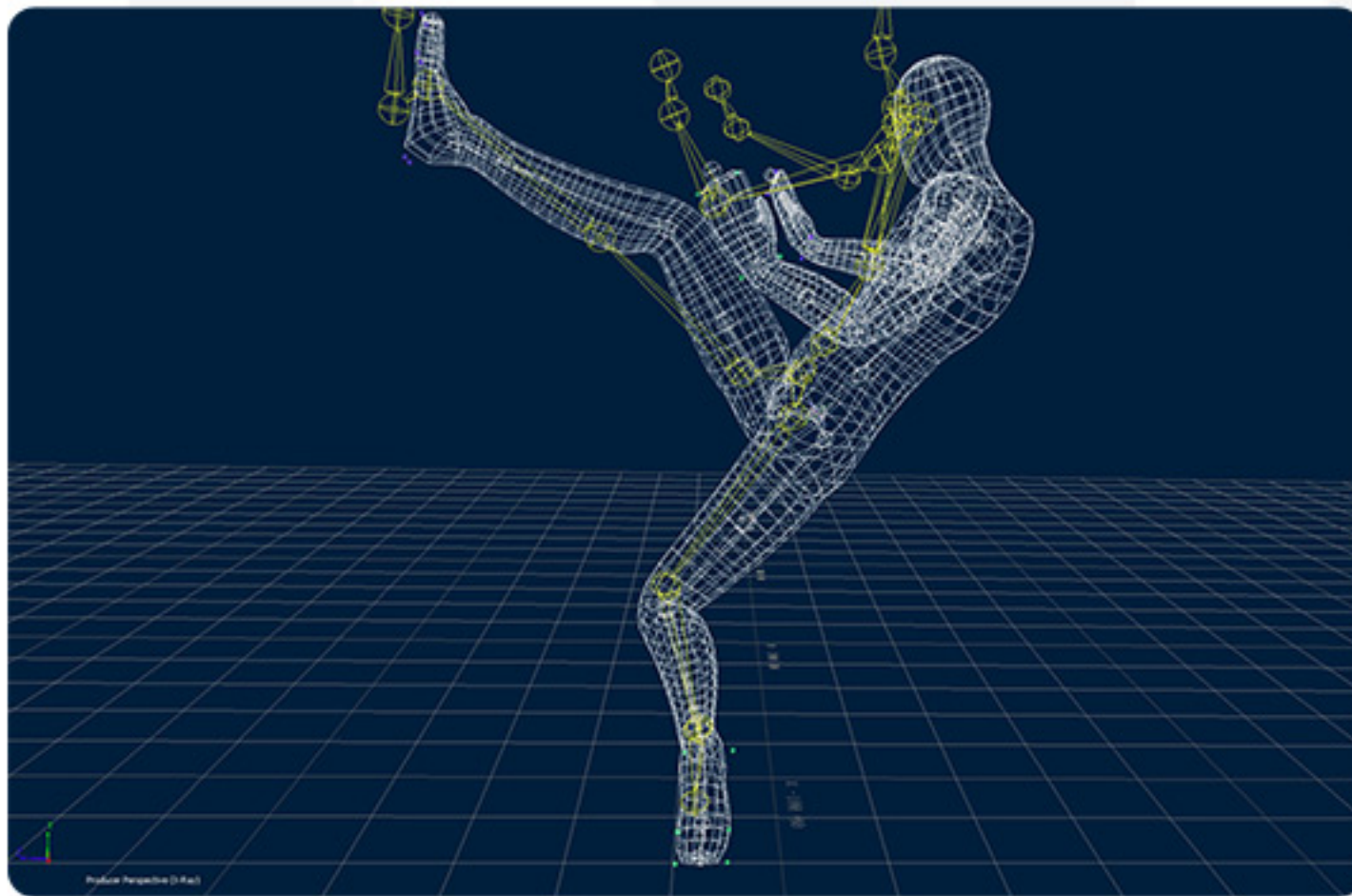
Optional Software

Drivers for Autodesk MotionBuilder

Advanced MotionBuilder drivers are available as optional extras for all Animazoo products. Data from Animazoo systems can be streamed into MotionBuilder allowing the control of a 3D model in real-time.

Data can be recorded within MotionBuilder in real-time allowing the director of the capture session freedom of and versatility of pre-visualization.

Animazoo Software Development Kit

The Software Devlopment Kit (SDK) provides powerful tools to integrate Animazoo systems with you own software allowing developers to create bespoke packages that harness the power of Animazoo motion capture.

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