

Modular automatic 4D body scan of high resolution

DESCRIPTION OF THE INVENTION

Modular automatic 4D body scan of high resolution.

- Modular system of high resolution, spatial and temporal, to scan the complete body of the corporal form and superficial texture in static and in dynamic.
- The system has two configurations of 8 modules (3D scan) and 12 modules (4D scanning).
- The system incorporates a specific software for the processing of the scans, integrating 3D-3D processing algorithms and biomechanical analysis.

The functionalities of the system are:

- Obtaining watertight meshes in standardized formats (stl, obj, ply).
- Calculation of homologous meshes with point-to-point correspondence.
- Calculation and automatic allocation of internal skeleton for its application in the animation of digital meshes (rigging).
- Integration of a digital measuring tape to obtain automatic measurements (only for the A-pose in static scanning).

APPLICATION BUSINESS SECTORS

- Research and teaching sector related to:
 - Biomedical sciences: anthropometry, physical medicine, sciences of physical activity and sports, forensic medicine, physiology and psychology.
 - Design: manufacturing, human factors and ergonomics, computer systems and modeling of the human body.
- Industries:
 - Technological
 - Retail
 - Transportation
 - Telecommunications
 - Video game
 - Digital production
- Healthcare sector in the following medical specialties:
 - Rehabilitation
 - Ortoprothetic
 - Sports medicine
 - Plastic surgery
 - Maxillofacial
 - Dental
 - Pediatrics
 - Neurology
 - Burned
 - Oncology
 - Diagnosis by the image
 - Dermatology

Modular automatic 4D body scan of high resolution

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- Modularity in several configurations.
- 3D and 4D scanning with watertight mesh.
- Obtaining a homologous mesh with point-to-point *interframe* correspondence.
- Obtaining textured meshes with a high level of realism image.
- Automatic assignment of skeletons for graphic animation of digitized bodies.
- Greater frequency of sampling than the technological solutions currently existing in the market.
- Low computing time.
- Interoperability with other existing instruments in biomechanics laboratories.
- Safe system and without contraindications for users as opposed to devices with laser systems.
- Reduction of costs associated with digitization and animation / simulation of human forms.

STATUS DEVELOPED OF THE TECHNOLOGY

TRL 9 – Actual system proven in operational environment.

INTELLECTUAL PROPERTY RIGHTS

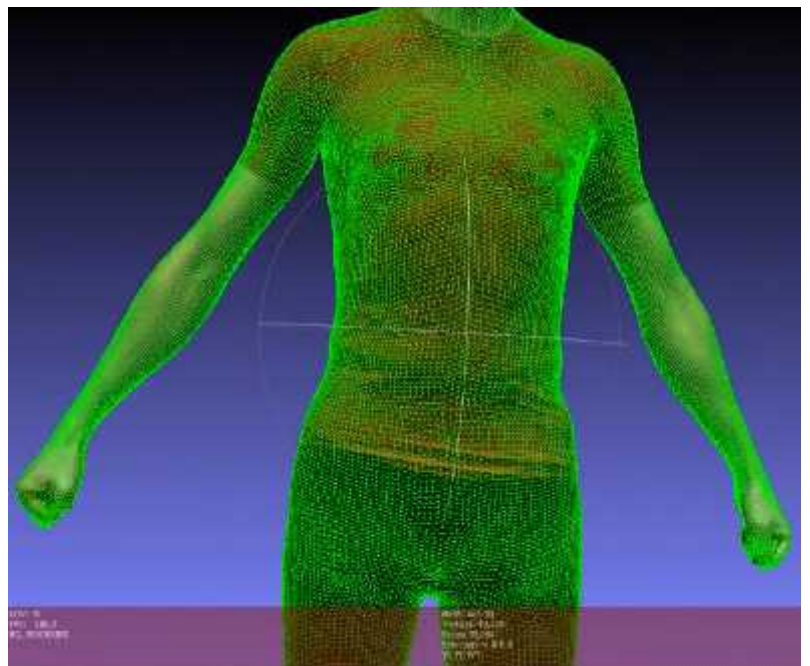
Intellectual property rights of Instituto de Biomecánica de Valencia.

COLLABORATION SOUGHT

N/A

RELATED IMAGES

Modular automatic 4D body scan of high resolution





Modular automatic 4D body scan of high resolution

CONTACT DETAIL

David Garrido Jaén IBV
david.garrido@ibv.org

+34 649308748