

StarWatch

Motion capture

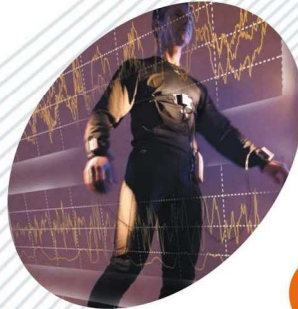
• Accelerometers - Magnetometers - Sensor Networks

> Description

Starwatch is the first wireless human motion sensor network. Each node of the star network formed combines magnetic and accelerometric sensors, a Leti proprietary low power radio link and a battery in a single module.

The network can include up to 16 nodes the size of a small watch. There is sufficient autonomy for a complete day's operation.

This system has been transferred to the MOVEA spin-off.



Technologies developed

- Miniaturization
- System architecture
- RF Protocol
- Signal processing
- Prototypes

Associated research topics

- Communicating objects
- Wireless sensor networks
- Body Area Network
- Motion capture
- Signal processing
- Technologies for sport and health

Pontential fields of application

- Intuitive interfaces
- Office automation
- Instrumentation
- 3D geolocation
- Video games

Presentation

Measuring human movement is becoming increasingly important for many applications in fields as diverse as video games, animated films, analysing the movements of amateur sportsmen or high-level athletes, and also in the medical field.

Existing motion capture systems are complex and expensive. They are dedicated to professional applications.

A specialist laboratory and trained staff have to be mobilised.

The CEA/Leti has been working for several years on an approach involving the use of micro-systems placed on the body or objects whose movement is to be captured.

These micro-system are sensitive to magnetic fields, acceleration fields and rotation speeds.

The range of commercially available sensors is growing each year.

This is due to major players in the fields of microelectronics (ST Microelectronics, Honeywell, Analog Devices, Freescale, Aichi Steel Asahi Kasei, OKI, etc.) and more specialist players (Tronic's, Colibrys, etc.) as well as R&D work being carried out at CEA Minatec.