Ubisense

Ubisense is the Smart Space company

whose sense-driven computing platform increases the value, usability and security of space.

At Ubisense, we create working spaces that sense the real world and respond automatically to your needs, increasing the value, usability and security of space.

Our ultrawideband (UWB) sensor platform locates people and objects to an accuracy of 6 inches (15cm) in three dimensions in real-time, allowing our platform to perceive the world in the same way you do.

Smart Space, Defined

Ubisense brings to life the spaces in which we work through a network of sensors that integrate a variety of corporate systems, like a central nervous system for your work environments.

SMART SPACES

In the busy operating room of a major hospital, a critical operation is taking longer than expected. The building, equipped with a Smart Space network, senses the delay and automatically generates notices to the staff, adjusting schedules and maintaining the delicate balance of resources without missing a beat.

In the thriving office of a global business, an office manager uses Ubisense for space and productivity optimization, to easily organize, configure and manage offices around the world, productively utilizing space and improving the working environment for staff. This reduces the company's overhead and increases productivity enabling it remain competitive in the marketplace.

The platform of success

The Ubisense Platform is the key to creating your own Smart Space.

The platform provides:

- Straightforward integration into other applications by embracing integration standards and, as new functionality is added, Ubisense protects you and your company from never-ending integration and unsynchronized upgrades.
- Reduced cost of ownership. Ubisense limits your potential to be trapped using a single proprietary location system because any location or sensor system can be plugged into its platform, encapsulating applications from hardware and protecting users being locked to a single vendor.
- Many applications and trained staff. By developing on a platform there are many developers writing applications and tools that you may be able to use in your implementations not a limited number of developers developing small numbers of proprietary applications.

"Research indicates that the percentage of enterprise IT budget committed to application integration is, on average, 40% - and may rise to 70% in some situations."

Aberdeen Group Inc August 2001

Why ultrawideband?

Location systems based on conventional radio frequency technology work poorly indoors because the signals reflect off wall, desks, people and equipment – called multipath distortion, which leads to positioning errors of several meters or more.

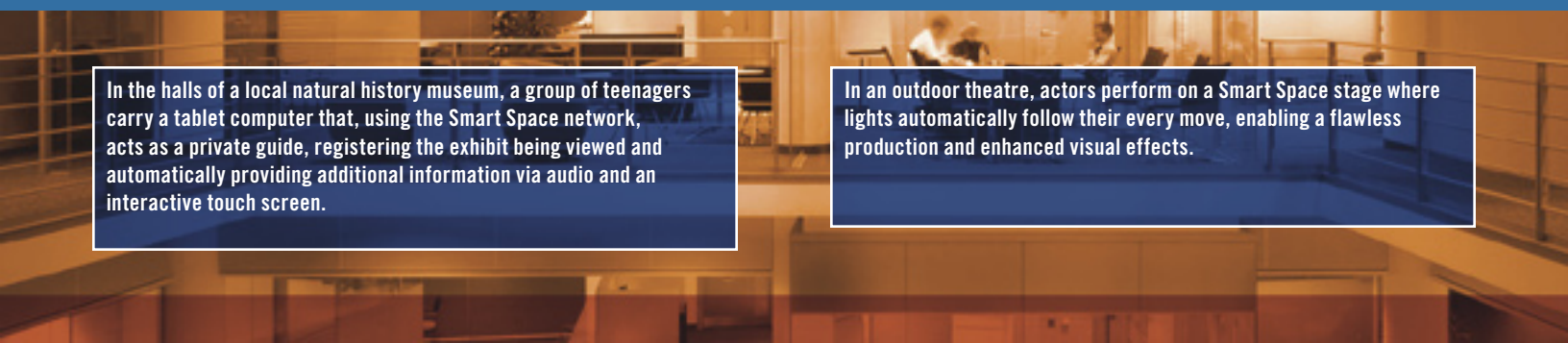
Infrared-based location work poorly due as they require line of sight from tag to reader dramatically increasing the amount of infrastructure required: the signal can be blocked if the tag is covered by something as thin as a shirt or jacket.

UWB's short duration pulses are easier to filter in order to determine which signals are correct and which are generated from multipath. At the same time, the signal passes easily through walls, equipment and clothing reducing the amount of infrastructure required and eliminating the need to reconfigure your sensor network if your space configuration changes.

3D Location is determined using two different algorithms. Time Differential Of Arrival (TDOA) which is measuring the time difference between a UWB pulse arriving at multiple sensors and Angle Of Arrival (AOA). The advantage of using both methods in conjunction is that a location can be determined from just two sensors decreasing the required sensor density over systems that just use TDOA.

While using UWB for location, sensors and tags support two-way communication using a standard RF channel. Ubisense can dynamically change the update rate of the tags depending on the activity and owner of the tag. Buttons on the tag can also be used to send context-sensitive information, opening a locked door, for instance, and the tag's programmable LEDs and buzzer can be used for communication, such as to remind a patient to take medication.

SMART SPACES



In the halls of a local natural history museum, a group of teenagers carry a tablet computer that, using the Smart Space network, acts as a private guide, registering the exhibit being viewed and automatically providing additional information via audio and an interactive touch screen.

In an outdoor theatre, actors perform on a Smart Space stage where lights automatically follow their every move, enabling a flawless production and enhanced visual effects.

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As easy as 1-2-3

It doesn't take long to turn your space into Smart Space with Ubisense's easy-to-install UbiSensors and UbiTags:

Step 1 - A CAD drawing of the building is imported into the Ubisense software platform or sketched by hand.

Step 2 - UbiSensors are mounted in the area to be monitored, networked together using standard commercial networking infrastructure and their positions loaded into the software platform.

Step 3 - UbiTags are then assigned to objects, such as a person or a physical object, such as a laptop computer. If the tags, which emit ultrawideband (UWB) pulses, now enter the space where the sensors are installed they will be located to within 6 inches of their location in 3D.

Why have a dumb building when you can have Smart Space?

Market segments

Workplace

Our goal is to help you utilize your space in the most effective way possible – to make it smarter.

With Ubisense, you can automatically determine the space usage in your facilities, enabling you to make quick decisions about changes or modifications to the space. Ubisense then provides an ongoing strategy for space optimization and productivity, which can reduce your facility costs by up to 30%.

You'll be able to support more staff and equipment in existing space, you'll have improved communications and processes between distributed teams, and you'll be able to get real-time measurement of occupancy and effectiveness metrics – you'll be living in Smart Space.

Healthcare

Healthcare environments – emergency rooms, surgical suites, laboratories – are so complex and fast-moving that traditional IT systems are unable to cope. Physicians, nurses and administrators are too busy caring for patients to spare the time it takes to enter information into inefficient computer systems. As a result, despite increased spending on healthcare IT, continual increases in the cost of healthcare persist.

What's needed is a system that can respond in real-time to changes in the real world. A system that supports a hospital or medical facility automatically, while decreasing the amount of time that medical staff spends using computers. Enter Smart Space.

The Ubisense platform delivers a real-time view of a hospital environment helping coordinate equipment, patients and staff. Ubisense can also make asset documentation for JCAHO compliance easier, produce real-time bed occupancy reports and vacancies increasing utilization, patient location reporting reducing search time and reducing equipment requirements through knowledge of where all equipment is and improved maintenance and inspection routines.

SMART SPACES

In a high security government building visitors are assigned a UbiTag when they enter the building. The Smart Space ensures that the visitors are accompanied by a member of staff at all times, raising an alarm if they are in a room without supervision.

In the darkened environment of a simulated urban combat environment, soldiers' movements are tracked precisely via a Smart Space network, enabling directors of the exercise to monitor and control every phase of the operation, from mock grenade explosions to determining the precise moment the objectives are achieved.

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Military Training

Training soldiers for urban combat in an age of terrorism and ever-changing battle scenarios is one of the greatest challenges facing today's military forces around the world. Creating the most realistic scenarios is crucial for success, as is the ability to review each exercise in detail to ensure mistakes made in a simulation are not repeated in the real world.

The Ubisense platform enhances the value and effectiveness of urban combat training scenarios with real-time overviews of exercises, monitoring of key events, recording and playback of exercise activities and automatically indexing video streams for after action review. Because the system can track objects to within 6 inches in 3D, Ubisense also provides a real-time safety and control mechanism for pyrotechnics and simunitions because it's aware of the exact location of every soldier involved.

Entertainment

The Ubisense Platform updates the classic soundstage by placing tags on actors and production personnel, enabling a stage manager to see an accurate real-time view of a scene as its shot. Ubisense can also be integrated to lighting systems using DMX512 to automatically track actors on stage opening up possibilities for new and enhanced special effects.

Ubisense's ability to record and then playback a scene in a performance or movie helps lighting designers, animators and directors see an accurate 3D view of the environment, speeding production, aiding the addition of special effects in post-production and reducing errors throughout a project.

No matter what industry, Ubisense makes sense.

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www.ubisense.net

Americas
8400 E. Crescent Parkway
Suite 600
Denver, CO 80111 USA
T: (720) 528-4266

Europe
St Andrews House
90 St Andrews Road
Chesterton
CB4 1DL
T: +44 (0)1223 535170