Ekahau

Innovation Through Location
Ekahau Overview

- The leading provider of software-based asset and people tracking solutions for enterprise Wi-Fi networks
- Privately owned U.S. Delaware Corp, with HQ in Reston, VA, USA
- Offices in the U.S., Finland, Germany, U.K. Japan and China.
- Spin-off from Helsinki University in 2000 with a solid scientific innovation in probabilistic math and statistical modeling, with 12 patents filed, 10 granted
- 1000+ customers, 100+ resellers worldwide
What we do in Finland

Hospital District:

- Länsi-Pohjan Hospital District / Kemi
- Pori Satakunnan Hospital District
- TYKS Turku University Hospital
- Central Hospital
- Salon aluesairaala
- Loimaan aluesairaala
- Kesko Group
- Lahti Päijät-Hämeen Hospital District
- Pieksämäki Commnun
- Pohjois-Savon Hospital District, Kuopio
- MainoVire Oy
  - Care Home Nokia
  - Several Care homes around Finland
- Vetrica Oy
  - Care Home Joensuu
  - Care Home Kuopio
  - Care Home Iisalmi
- Itä-Suomen Hospital District / Savonlinna
- Kymenlaakso Hospital District / Emergency Department
- Docrates Privat Cancer Hospital, Hki
- Yksityinen sairaala 2011 syksy
- Tuusulan Commun
  - Tuusula Health Care Center
  - Kellokoski Health Care Center
- Kesko Group
- Hospital Invalidi säätö
- Hospital Orton

Invalidi säätiö

KL/JAH 30.12.2009
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GPS vs. Indoor tracking

GPS: Street Address Location

Indoor Tracking/ RTLS: Building/ floor/ room -location
Required accuracy for enterprise apps:
- building
- floor
- room

GPS – signals do not reach indoor space

Wi-Fi – used for data and voice = standard infrastructure for location tracking within enterprise campus: Wi-Fi RTLS

Passive or Active RFID:
- require installing RFID readers and RF antennas = prohibitive cost.
Standard Wi-Fi infrastructure is today used ENTERPRISE-WIDE For Data and Voice AND LOCATION purposes.

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<tr>
<th>DATA</th>
<th>VOICE</th>
<th>LOCATION</th>
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802.11 Wi-Fi

Ekahau pioneered launching the industry’s first Wi-Fi location system in May 2002.
Benefits to Hospitals

**Asset Tracking**
1. Improve Asset Utilization
2. Eliminate excess inventory / leasing
3. Improve maintenance process
4. Theft and loss prevention

**Process Visibility**
1. Improve workflow
2. Eliminate bottlenecks
3. Visibility
4. Optimize Patient Flow
5. Room utilization
6. Waiting times, Patient paging...

**Safety & Security**
1. Track employees in hazardous areas
2. Panic Button alerts

**Patient safety**
1. Track patients
2. Panic Button alerts
3. Alerts
And more …

Patient self-registration

1. Patient self registration + Ekahau Tag
2. Ekahau RTLS can then start to guide the patient.

Patient guidance

1. Ekahau RTLS can guide patients inside the hospital.
2. Eg. Guide the patient to Lab.

See the new Ekahau RTLS video!
Advancing Ekahau’s Position in the Healthcare Value Chain

Accurate RTLS tags locate assets:
“Help my nurses find clean IV pumps quickly.”

Asset visibility offers business intelligence for process automation:
“I want full utilization of my IV pumps so that we can get patients through the process faster and optimize staffing.”

Asset visibility is tied to people and workflows:
“Let me know when IV pumps are dirty and when they were last touched so I can improve cycle times and reduce capital inventory purchases.”

Accurate RTLS tags locate assets:
“Help my nurses find clean IV pumps quickly.”
Vision™ reveals the business intelligence behind the interaction of Assets + People + Communications
Business Intelligence Solutions for the Whole Hospital

- Improved Inventory Utilization & Management
- Environmental Monitoring of Temperature & Humidity
- Automated Workflows for Improved Patient Throughput
- Enhanced Safety with Instant 2-Way Communications
Ekahau Wi-Fi Expertise Drives RTLS Success

Ekahau Wi-Fi Tools for
- planning,
- optimizing,
- surveying Wi-Fi networks
How Does RTLS Controller Know the Location

1. System Calibration

2. Location Tracking
Ekahau RTLS for Healthcare

The ONLY Real-Time-Location Solution that can provide resolution at the:

- Campus/Multi-Campus
- Building level
- Room level
- Door level
- Bed level

...all using your existing Wi-Fi infrastructure + Ekahau software and Ekahau Tags!
Ekahau Advantage: Open-Easy-Accurate

**OPEN**
Works with any standard Wi-Fi network!

**EASY**
3-Step installation in days, not months!

**ACCURATE**
Room accuracy with existing VoIP grade Wi-Fi!
Ekahau Location Beacons: Detecting Micro-zones

Ekahau Location Beacons
- Battery-powered, wall-mount, Infrared (IR) transmitters, with unique ID
- Ekahau tags detect the IR signal & identify zone
- 2-5 year battery life, with no cabling or external power – easy to install and move

Completing Wi-Fi: IR + RF based location
- 100% room accuracy with low Wi-Fi coverage
- Precision IR beam, covering small areas
  - Hospital Bed
  - Hand-washing sink
  - Warehouse self location
Ekahaun Paikantimet/tägit

- **Laitepaikannus:** Asset Tags
- **Henkilöpaikannus:** Staff Badge/Pager
- **Potilaspaikannus:** Wristband Tag
- **Langaton tiedonvälitys:** Temperature Tag
- **Materiaalinhallinta:** Manufacturin Tag
- **Paikannin teollisuuteen:** Industrial Tags
- **Clientit (mm. kannettava, Dect-puhelin):** Software Tag for wireless handsets
Ekahau Site Survey (ESS)

**ESS Professional**
- Wi-Fi Planning and design
- Coverage mapping
- Verification and optimization
- Automated RTLS deployment
- REPORTS Expected Location accuracy analysis - prior to on-site deployment
- 10 000+ users worldwide

**Ekahau Heatmapper**
- FREE Wi-Fi coverage mapping
- Stripped down ESS
- Viral marketing tool
- Launched in April 09
- 100 000+ users worldwide
few examples around the world

**UK:**
- Basildon & Thurrock NHS
- Leicester University Hospital
- Newcastle NHS Trusts
- Ect.

**Middle Europe:**
- Westküstenklinikum Heide in Northern Germany
- Masaryk Memorial Hospital in Brno, Czech Republic
- Universitätssklinikum Innsbruck, Austria
- Ect.

**USA:**
- Hundreds of hospitals uses Ekahau RTLS in USA
- University of Kentucky Medical Center + 2600 tags
- Carolinas Healthcare System (CHS), + 4000 tags
- Ect.

**APAC:**
- Bangkok Hospital
- Southern Health’s Dandenong Hospital Emergency Department in Australia
- Ect.
Example Case Stories

Ekahau has hundreds of enterprise customers worldwide, here examples:
Case: Docrates

Customer:
- Private hospital in Helsinki

Ekahau RTLS ratkaisu:
- Ekahau T301DB
- Ekahau T301A

Requirements:
- Doctor call (alarm)
- Nurse call nurse (help)
- Patient: help call

Environment:
- Standard Cisco Wi-Fi verkko
- Ekahau planned network.

Asiakkaan kustannus:
- 50 – 100 assets, people, price around 15,000 – 20,000 €
Cutting-Edge Customers

- 10+ facilities and clinics
- 400+ beds and over 1,000 employees
- Numerous awards for quality care

- “Relentless in our pursuit of answers.”
- 300+ bed pediatric care leader
- Ranked “Best Children’s Hospital” in 2012

- 132 hospitals nationwide; 817 clinics
- $27B in total expenditures (2001)
- Serves a 22M veteran population

- 665+ beds; 6 hospitals
- Ranked 14th leading medical school
- Trained 87% of the “Best Doctors” List
North Carolina
6 Facilities; 5,000+ Beds; 3M sqft.

Solution:
- 4,000 Asset Tracking Tags
- Infusion pumps
- Ventilators

Why Ekahau?
- 92% accuracy within 12ft.
- Scalable across System
- Cisco-recommended
  - Cisco LWAPP
Palmetto Health

Columbia, SC
649 Beds; 1,500,000 sqft.

Solution:
- 3,080 Asset Tracking Tags
- Infusion pumps
- Wheelchairs
- Patient Monitors
- Breast Pumps

Why Ekahau?
- Capital savings with fewer purchases and equipment leasing contracts
- Improved maintenance management
- Cisco compatible
Case: Itä-Savo Hospital District (SOSTERI)

**Customer:**
- Cover the whole Hospital District

**Ekahau RTLS:**
- Ekahau T301A, T301BD, T301W
- Ekahau tag + RFID

**Requirements:**
- Safety (First Aid Department, psychiatry ... healthcare centers)
- Asset tracking
- Patient guidance
- Doctor’s room (session + patient control)
- Patient: help call

**Environment:**
- Standard Cisco Wi-Fi verkko
- Ekahaun planned network.
Case: Univ. Kentucky Medical Center

Customer:
- University of Kentucky Medical Center
- 473 Bed Acute Care Hospital
- Regional Trauma Center
- Wi-Fi network covering 1.2m sqr.ft. campus

Problem
- Excess stock of high value assets

Ekahau RTLS -solution:
- 2600+ T301A Tags for asset tracking
- Patient and staff tracking as the next step
- Deployment on May 2008

Requirements:
- Track Infusion pumps & other assets
- Alert equipment leaving the building
- Infection control

ROI:
- Savings through reduced equipment rental cost (actual numbers presented by hospital):
  - 2008 rental cost: $400,000
  - 2009 estimated rental cost: $48,000
  - Annual savings: $352,000
  - Ekahau RTLS cost: $200,000
  - ROI in the first 12 months: $152,000
Case: Carolinas Healthcare System (CHS), USA

Customer:
- Second largest independent hospital system in the U.S.
- 6 Facilities, over 3m sq.ft and growing
- System-wide Beds 5000+

Ekahau RTLS:
- 4000+ T-301 Tags
- 90 % deployed by the customer staff
- One central Ekahau server serving all facilities

Requirements:
- Track Infusion pumps & Ventilators

Network:
- Various generations of Cisco across the enterprise

ROI:
- Rebalancing of capital assets across the enterprise
- Capital budget savings through reduced equipment and leasing programs
- Improved preventive maintenance process
- Real-time visibility to all equipment hospital wide
Case: Psychiatric Hospitals, Canada – Staff Safety

Customer:
- 188 Bed Psychiatric Hospital in Ontario
- 206 Bed Psychiatric Hospital in Quebec

Problem:
- Staff safety was becoming a serious problem with certain patients and patient types.
- Staff safety and morale impacted by “code-white” incidents
- Several cases where staff have been seriously injured by patients

Solution:
- Staff members carry an Ekahau T-301-B Wi-Fi Badge with “panic switch”
- Staff members (doctors, nurses and transporters) simply pull on the tag to initiate a “code white”
- Code White escalations sent to Security and other staff members with precise location of incident and “type” of staff member involved.
- Serious staff injuries are declining and staff morale is improving.
Example Case Stories

Other Industries: retail, mining, cruise ships etc.
## Ekahau Target Markets

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<td>Site Surveys &amp; Signal Analysis</td>
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Shopping malls

Westfield - London

Valet Parking

SOK, Finland

Kesko, Finland

Gap Kumppani – Smartphone Client : Android / Apple / Win 7

Customer flow monitoring, 07.07-20.07.2008
Movement profile report, All days, From: 8:0:0, To: 12:0:0, Groups: Men, Women
Report generation time: Monday, October 27, 2008 4:26:19 PM EET

Arrows indicate the most common movement direction. Arrow width indicates the total number of visits. Each customer may be counted multiple times.

Colors indicate the percentage of customers moving to the arrow direction:

- 1
- 4
- 12
- 25
- 43
Case: Oasis of the Seas

**Customer:**
- Royal Caribbean Cruise Lines
- Oasis of the Seas, world’s largest passenger ship, carries up to 6000 passengers and crew members

**Ekahau RTLS:**
- Ekahau T301W wristband tags use to track staff and family members using iPhone as mobile GUI

**Requirements:**
- Track children and family members 24/7 with a deck and cabin accuracy

**Network:**
- Standard Cisco Wi-Fi network

**ROI:**
- Increased passenger safety
- Fast & low-resource method of locating “missing child “
- Indoor navigation on ship
Case: Vale Inco, Ontario Canada

Customer:
- Nickel mine operation in North Ontario
- Part of global mining giant Vale (Brazil)

Ekahau RTLS:
- Ekahau Wi-Fi Tags mounted on mining vehicles
- 95% deployed by local + Inco staff

Requirements:
- Measure and monitor production of ore by tracking vehicle trips to crushers

Network:
- Underground Wi-Fi used for standard voice and data

ROI:
- Miners’ safety improved
- Reduce time spent looking for vehicles at shift changes.
- Measure productivity in real-time and catch bottlenecks and process faults when they occur
Track & Trace in Logistic und Industry

1. Asset Tracking
   - Parts
   - Containers
   - Tools

2. Personal Tracking
   - Safety and Security
   - Work-flow

3. Inventory tracking
Hymer Project Example

Tracking Mobile Homes

- 1800 T301 A Tags on steering wheels
- Controlling of production progress in manufacturing line (average accuracy 3-5m)
- Finding cars on big campus site and parking lots for remanufacturing and delivery (average accuracy 5-10m)
- SW integration with Hymer Management System
- Based on Siemens/Enterasys WiFi
Other Industries

- Healthcare sector
- All hospitals, hospital districts etc.
- Care homes
- Private hospitals
- Retail
- Shipping companies
- Manufacturing
- Maining
- Logistics
- Ect....

Ekahau Site Survey
- all industries

Global Presence
- Over 1000+ customers worldwide
3-Step Deployment of Ekahau Wi-Fi RTLS

1. Install Software
   - Ekahau RTLS Controller SW
   - Floor Plan maps
   - Applications

2. Perform Site Survey
   - walk around the site once for RF site-survey

3. Start Tagging and Tracking!
   - Any Wi-Fi clients of Wi-Fi tags

Any Wi-Fi network

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Ekahau Customer and Partner Examples:

**Sampling of customers:**
- FedEx
- Volkswagen
- HYMER
- VALE INCO
- Codeco
- Carolinas HealthCare System
- The London Clinic
- Hynix
- Toyota
- NASA
- United States Postal Service
- U.S. Army
- Disney

**Major Distributors:**
- HP
- GTSI
- Bell
- Siemens
- Nortel
- Marubeni Corporation
- Fluke
- Simplex Grinnell
- Tyco
- CDW
- McKesson
- 3M

**Wi-Fi Partners**
- Aruba
- Siemens
- Meru
- Arrow Span
- Proxim
- Polycom
- Hitachi
- Extreme Networks

**System Integrator partners:**
- InCode
- IBM
- Northrop Grumman
- BearingPoint
- Accenture
- NCR

**Technology partners:**
- GainSpan
- Microsoft
- Atheros
- iAnywhere
- SAP
- Digi
- G2 Microsystems
- Lantronix
- NTT DoCoMo
- Hospira
- Intel