

CeBIT 2002 IT Fair

- from the personal navigation perspective

Report by Pasi Pekkinen 7.6.2002

CeBIT 2002 suffered of a loss of visitors and exhibitors compared to last year. The number of visitors was 18 percent smaller (total of 700 000) than in 2001 and the number of exhibitors was 7 962, which is 131 less than on the previous year.

Although CeBIT is the largest IT fair and the scope is nowadays global, quite many of the exhibitors target only at German or German speaking markets. Having said that, the number of far eastern stands seems to be and stay high.

In relation to personal navigation, there were, once again, numerous companies presenting their GPS related devices as well as navigation and fleet management solutions.

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1) Applications

Ydreams is a Portuguese company which develops location based applications such as: fluidTraffic (to receive traffic information), fluidShopping (to receive information about products and shops), fluidMuseums (for museum visitors), and fluidEvents (for searching stands, companies or products).

Condat (from Germany) presented their Skyware platform and applications, as they did in Cannes.

Telia's (Sweden) Friend finder service has now been available for six months. It is cell ID based and can be used with WAP, WEB and SMS. The service has been popular according to Telia's representative. They also provide a fleet management service and Närä dig services. A proximity alert service is coming in the future. The idea of the service is that a user will receive an alert when a friend is nearby.

E-Plus launched i-mode in Germany. The service portfolio was quite rich and included many services, which could exploit positioning. The basic charge is 3 € / month. Some additional services bear a 25c-2 € charge/month. The terminal is manufactured by **NEC** and costs 249€ with a 2 year contract. Without the contract the device costs 449€.

DaimlerChrysler's City Companion provides four types of services: City Organiser (for organising meetings), City Navigation, City Highlights and City Services (phone numbers to hospitals, services related to your car and train schedules). The service is available for all major German cities.

The **NavTech** stand had several partners presenting their products and services. Present were **Intelliwhere**, **Webraska**, **Benefon**, **Yeoman**, **Destinator**, **Siemens** (VDO Dayton) and **T-info.de**. Webraska from France presented their SmartZone LBS Applications, IbDN® Lite and IbDN® Tracking solutions. Their representative said that the device required for their online navigation service cost less than €1000 and the use of the service costs 3-10 € per month.

At the **T-Mobil** stand **Tegaron** (Germany) presented their Pocket PC based navigation service. The price for the service is 1 euro per route, including the communication costs. The package (hw and sw) costs 400 €. The service has been available for 1,5 years and it has 4500 users. T-Mobil's T-info is a cityguide service, which was launched in February. The service is used over GPRS and costs 99€ per year.

NTT CoCoMo's i-navi link enables i-mode services to a i-mode compatible car navigation system by linking the i-mode phone with the system. i-area is a service that automatically selects and displays content related to the location of the i-mode user. The service is provided in 482 different regions in Japan. Thus location is used as a filter to information.

According to the press, at the **Ericsson's** stand there was a joint presentation of the **RegiSoft** (Israel) mobile ticketing solution at the Ericsson booth, integrated with third party location-based and mapping services and delivered via Ericsson's Multimedia Messaging Service (MMS). Unfortunately we missed this presentation.

Fleet management applications

SkyCom from Luxembourg presented their fleet management software called the WinFleet Plus.

Spektra from Germany presented their fleet management solution called the logiOffice.

selog is a German company which provides a fleet management solution called gotos.

Truck24 (Germany) provides a truck management application, which is operated via Internet. They lease the terminal and software for 50 € per month plus communication costs. The terminal skey.webpanel has been produced by Höft&Wessel and it incorporates GSM.

datafactory (Germany) is an IT specialist for system components and complete system solutions for vehicle and personal location, fleet management and traffic telematics. WEBfleet is their service, designed for the online location and tracking of vehicles, boats, containers, people or other mobile objects. datafactory supports Benefon Track, GAP's HiPer and the Nokia Communicator. They claim that 80-90% of East-European trucks are equipped with tracking systems.

Elcon (Germany) provides a fleet management application that runs on a PC. The application communicates via SMS with a service centre.

Vodafone Passo is the specialist group for telematics in Vodafone. They are developing together with BMW a monitoring solution. They provide a corporate fleet management solution based on SMS communication, and it is cell ID based.

Presentec (Germany) presented TrackLink service, which is a fleet management service designed for Benefon Track and ESC.

Novo Group was at the **Celesta's** stand presenting mTrack and mWork applications. In addition they presented Followit's MRS Transponder, which has integrated GSM and GPS modules. Together with mTrack they provide a fleet management solution.

Navigation and routing applications

PTV from Germany is an application service provider, they operate and host several services on the PTV eServices for WEB and WAP for the German market such as: map&guide route service, map&guide map service, map&guide approach routing, map&guide street map service, map&guide Send-a-map and Traffic condition service. PTV also provides a fleet management solution called ptv fleet. PTV has merged with Map&Guide.

Map&Guide (Germany) provides a route planning service for Europe based on NavTech's data. Their services can be accessed via Internet or via wireless connection. Their prototype PDA navigation solution is made for Pocket PC and it includes voice guidance. It should be available in July 2002, and the expected price is 560 € including data for one country. The route planning can be done with a PC in advance and only the required information is downloaded. The price for the on-line routing service is expected to cost 50 cents - 1 € per route.

Falk New Media operates only in the German market at the moment, where they have 60% share of the printed maps market. Falk provides a routing service for the E-plus' i-mode service in Germany. For Viag they provide a hotel and restaurant information service, which contains 60 000 units.

GM Onstar Europe is based on **Acunia's** (Belgium) middleware technology called Open Telematics Framework. The service will be used by PDAs and is expected to be operational in April 2002.

At the **HP** stand **Shell Europe** presented their navigation and routing service called Shell Co-driver, which is designed for Pocket PCs. The product will be released during summer

2002. The route is calculated on a server and delivered via a GSM data call. The service has been realised by Webraska and the data is from NavTech. The service will presumably be free for one year, assuming you have a PDA and GPS receiver. Shell offers GPS receiver (by Holux) and a car holder for a couple hundred euros.

2) Data providers and services, GIS

Tele-Info (Germany) provides route guidance for mobile phones, PDAs and in-car navigation systems. The price for one route is 1,5€ and the additional POI service costs 0,01 € / minute. The service is based on TeleAtlas data.

DDS is a subsidiary of PTV and their business is tailor-made map data products.

Terra Map Server (Germany) provides a geoportal for all kind of geodata. The service is in business use, mainly by utilities and municipalities. They have collected data from all German Länder, including orthophotos. The orthophoto coverage was at the time of CeBIT 60% of Germany. They are searching for partners in other countries. They claim to have the infrastructure ready even for a more broader map service. In addition to the provision of geodata, Terra Map Server hosts some applications, which can be used on a pay per use basis: GeoCoder, MapRequest and DataInfo.

Phonetic Topographics is a **TeleAtlas** subsidiary. They combine speech and maps. According to them in two years there will be full speech control and output with embedded in-car navigation systems. They also claim that mobile devices will have speech control by the end of 2002. They estimate that TeleAtlas has approx. 55% of the global market and NavTech 45%. In Europe TeleAtlas is stronger (60%) and in NA its vice versa where NavTech holds approx. 60% of the market.

TomTom presented at the **Nokia** stand their Maps-on-line is a wireless service for the Nokia 9210 Communicator that provides maps, driving instructions and local information for 3€ per month.

GeoConcept is a French GIS software developer and publisher. They act also as a reseller of geodata. A Pocket PC version of their software called PocketGIS will be released later.

FMN-Fernmeldetechnik offers a DGPS service in Germany for 120 € per month.

3) Hardware providers

Gotive is a Slovakian company that develops customised wireless enterprise communicators in small quantities (tens or hundreds). They integrate the required components, which can be a PDA, GSM, GPSRS, GPS, bar code reader, smart card and magnetic stripe reader, printer, fingerprint identification unit and camera.

Wear-a-brain develops wearable computing integrated with GPS of RF-Ids.

At the **SonyEricsson** stand **Fält Communications** from Sweden displayed their new product called MIIPS. MIIPS is a platform for telematics developed by Fält Communications in cooperation with Ericsson. MIIPS functions with GPRS, GSM, GSM data and is additionally GPS ready. Other interfaces such as Bluetooth, WLAN, PSTN, LON and can are being developed.

Egeo from Germany displayed Fusion g³, which is an add-on to Visor PDAs from Handspring. It contains GSM, GPRS and GPS technologies. The price is 1299 €. Map&Guide provides the data and software for Austria, Switzerland and Germany. The product would be released in April 2002. They expect to sell 20 000 units this year.

GPS receivers and components

The **Palm Europe's** stand displayed **Matsuhita Electric's** new GPS module that uses the SD format, which was announced just before CeBIT to be released in Autumn 2002. The device will use the SiRFstarIIe/LP GPS chipset.

Unitronic is a German distributor of electronic components. Their offering includes GPS devices. They also produce a GPS receiver called NaviMouse for Palm m505 and m505 for €250.

Billionton Systems from Taiwan displayed their Navigation CompactFlash GPS receiver for Pocket PC. The price is approximately \$ 400.

PointStar's (Denmark) INSenseE™ is a 3D position and orientation sensing system. It has a GPS receiver and an electronic 3D compass. INSenseE/CF is an add-on module for PDAs and Smart Phones with a standard CompactFlash expansion slot. It will be available for the market in the second half of 2002.

JTEL is a Korean company that provides CellVic named PDAs and related accessories. They had a specific PDA with in-built GPS, called CellVic-GPS produced by Navius. The price for the CellVic-GPS is \$300.

Racewood technology from Taiwan produces a GPS receiver, which consumes 20 mA.

Pretec Electronics (USA) presented their GPS extension called CompactGPS, which is designed for Pocket PCs. The price is approximately €300.

Alan Electronics (Germany) presented the radiophones with a 4-5 km range produced by Albrecht. They have a model with an inbuilt GPS receiver for € 350.

Princip is a Czech company presented two products. The Lupus Kontrollor is an electronic log book (off-line mobile GPS unit with antenna) for € 599. The on-line GPS/GSM solution for fleet management and logistics purposes costs € >800.

Holux Technology from Taiwan provides a GPS engine board featuring SiRF II chipset with embedded ARM7TDMI CPU for customised applications in firmware. They also provide GPS receivers GM-200/210 series which can be connected to laptops, desktops and PDAs as well as clip on receivers GM-250/251 for Palm and IBM PDAs. In addition they have a standalone GPS receiver called GM-100.

Rikaline's (Taiwan) GPS receiver GPS-6010 communicates with other electronic utilities through RS-232 or TTL. Rikaline's Data Logger GPS-6050 contains a MMC memory card and is compatible with all GPS receivers. Rikaline's Auto PC GPS-500 contains GPS, DVD, DAB, MP3 and WMA for € 750.

Nokia presented the LAM-1, a GPS accessory for the Nokia Communicator. The receiver will be packaged with TomTom's CityMap product and will cost approximately 300 €. An external antenna will be available for indoor use.

Femco (Far East Machinery Taiwan) is another Taiwanese GPS receiver and accessory provider. Femco's StreetRanger is a Compact Flash GPS receiver for PDAs. Their iGPS180 GPS Receiver can be connected to PDAs and laptops.

Leadtek (Taiwan) provides two GPS receivers GPS-9531/9533 and GPS-9532 with cable connections and one CF card type receiver GPS-9534. They also provide GPS OEM modules.

According to press releases, **Thales Navigation** announced the Magellan SporTrak™ Pro GPS receiver during the CeBIT. Unfortunately we missed their stand.

Tracking devices: GPS + GSM

GlobalSat from Taiwan displayed their GPS related products. GlobalTrack Trip Recorder G-5010 is an off-line GPS receiver with a memory. GlobalTrack Vehicle Tracking System G-5020 GPS data is transmitted via SMS. G-5040M (for € 600) contains some additional security features. GlobalSat also provides GPS receiver engine boards and a GPS Receiver Box, which can be connected to a laptop.

plettac mobile radio (Germany) has two products available. The simpler model Moviline MCT Economy (for 600 €) has integrated GSM and GPS modules and allows simple configuration with SMS. The other product, Moviline MCT 2 is an on-board computer with GSM and GPS for the price of € 1200.

Trans Logistic Systems from Bulgaria develops hardware and software for fleet management purposes. In TLS Tracker the GPS module is connected to a GSM phone and communication is based on SMS. The cost for the system is 600€. TLS Tracer is a passive GPS device (log book), from which data can be downloaded afterwards. The price is 250€.

Cellocator (Israel) produces hardware and integrates it with software. Their technology partners include Siemens, SonyEricsson and Motorola. They develop car security and fleet management solutions. They have their own "black box" including GSM+GPS. They say

that 30 000 of their units have been installed mainly in Europe and Asia. According to them, big companies in their business area are Tracker UK and Trimble.

Garmin presented their GPS-receiver products, including the NavTalk GSM. The price for the NavTalk is expected to be roughly €800 including 9 countries of NavTech data. The product is expected to be released in May. The memory holds up to 16 megabytes of map data.

ComRoad (Germany) provides StreetGuard named system for PDAs (Casio, Compaq and HP). The kit comprises of a pocket pc holder, microphone and loudspeaker, DIN car-radio size, applications, GPS/GSM antennas, GPS receiver and a GSM modem for approximately 1000€. In addition they provide telematic services: navigation, information, safety services, emergency assistance etc. The price for the services is 15€/month for maximum of 30 requests.

GAP from Germany presented the HiPer, which is a small portable telematics platform for personal security. GAP's HiLocate is a professional object tracking software.

Micronet's (Israel) NET-960 is a mobile data terminal for vehicles. The basic model costs \$240 in large quantities (>20 000). If GSM capabilities are added (from Siemens) the additional price is \$80 and for GPS receiver \$115 is added. They claim to have sold large numbers of the old version (without GPS) to the US market.

Magnatec Technologie from Germany provides a fleet management solution. They have GPS-GSM box for 765 €. In their system a message is sent every time when the engine is started and stopped. Additional messages are sent whenever a event occurs. Their CarOrganiser is an electronical trip data book, which can be used to distinguish trips to work, other business trips and private journeys. This can be important for fiscal purposes in Germany. They have also provided the service centre software for Benefon/Vitaphones cardiophone service.

4P Mobile Data Processing is an Italian manufacturer of rugged hand held computers. They have a product called ORION, which is a modular vehicle tracking system based on GPS with built-in GSM connectivity.

PDS' (Germany) main business is in mobile data collection using barcodes. They are a hardware and software integrator and have a navigation solution to offer. For the German post they have provided a package tracking solution.

Drive-IT is a Swedish company that provides a service for car pools and car rental companies. The idea is to automate the use of cars in the pool by monitoring the availability of the cars. In addition the cars are linked to a navigation system. So far, Drive-IT has sold 350 terminals. The price of the terminal, which has GPS and GSM and a smartkey reader is 1200 €. According to them, the biggest market is in Germany. In October they will release a Windows CE based version for the US market.

4) Infrastructure

Nortel Networks' platform works for both 2G and 3G networks. They have chosen the NSS approach but plan to support BSS later in the future as well. They believe that location based services in Europe will be initially for business users and 80% of the services will be Cell ID based. In the US, E-OTD will be used. In Nortel's roadmap an autonomous GPS will come first, A-GPS later in the future.

Kapsch, an infrastructure provider from Austria provided their first proprietary location server already in 2000. They presented their location server concept for the 3G networks. Their target markets are Austria and Eastern Europe.

5) Positioning methods, Bluetooth, WLAN

Commil's (Israel) representative pointed out that the basic property of Bluetooth is locality. In their system Cellarion, several access points are listened to. They expect the consumer market to be a reality in two years. At the moment they concentrate in hospitals and retail stores. They say that the first connection to the network takes few seconds. The cost is approx. \$500 per node, that can serve up to 7 persons at a time. They also said that a company called **Bluesoft** is developing a more precise positioning method based on Bluetooth.

lesswire from Germany has a patent for Bluetooth positioning. The method is based on time-differences. This year they presented mainly IR based fine positioning.

According to press releases, **Ekahau** presented their WLAN based positioning technology with their German partner MMS GmbH. Unfortunately, we missed their stand.

6) Universities

The **Saarland University** presented the Arreal system, which is a navigational-aid system for pedestrians, designed as prototype for the university's campus. It visualizes the users location on a map, which is oriented by the users viewing direction. Similar to car navigation-systems the system is able to guide the pedestrian to a given destination, using both graphics and speech output. Walking outdoor, the system uses a GPS receiver for localization. In an indoor environment IR beacons are utilized. The current system is based on a wearable PC made by Xyberonaut. It features either an arm-worn TFT-display or a headset capable of VGA-graphics. Future applications are a guide for tourists or exhibitions.

The **University of Stuttgart** has developed NEXUS, which is an open global infrastructure for spatially aware applications. NEXUS can be accessed by all kinds of location aware applications. The main task of the platform is the management of dynamic computer models of the real world in a distributed environment.

The **University of Koblenz** has a project that aims to integrate a driver's log book to Siemens' VDO car navigation system.