PROJECT RESULTS

A new platform
for developing component-based mobile applications

Mobile Internet

Mobile communication, personal computing and distributed information services are merging at a rapid pace. Although commercial Personal Digital Assistant (PDA) platforms providing these services exist, their computational capacity is modest, their ability to connect with remote information services limited, and the number of applications available very small. The PDA market needs to develop further before software vendors take PDAs into account when planning the requirements and architecture of software product families. A reliable, component-based platform will help achieve this.

experience to provide a mobility-enabled middleware platform founded on fully-fledged component technology, extendable on request according to application needs.

Pervasive computing
European industries have identified component-based software development and product family approaches as the best way to increase competitiveness and exploit the business opportunities in fast-changing markets for mobile communication and distributed information systems.

As mobile computing creates the basis for pervasive computing, there's a need for support of smart spaces, minimal user disturbance, service scalability and graceful degradation of service qualities. VIVIAN meets this need.

The solutions developed by VIVIAN enable:
• Reductions in application development time (time to market, lead time) by enabling the creation, generation and reuse of high-

Mobile ticketing

New approach
VIVIAN has developed such a middleware platform for developers of third-party applications and services via mobile terminals (smart phones, PDAs and laptops). VIVIAN solutions focus on Symbian OS and Linux-based mobile terminals, building on CORBA (a middleware platform for object systems)

quality software components for PDA applications.
• Savings in development costs by minimising expensive, time-consuming reworking.
• Reductions in technology integration risks in the area of mobile terminals.
• Promotion of component-based development for applications for

PROJECT RESULTS

PDAs and handheld computers.
- The creation of commercial applications for the PDA markets based on the product family concept.
- Documentation of knowledge acquired in the project on component-based software development for PDA devices and handheld computers.

As well as covering most of the issues addressed by mobile computing, such as mobile networking, mobile access, and location sensitivity, the VIVIAN platform also provides basic support for interaction with smart spaces (remote user interface and short-range wireless connectivity technologies like Bluetooth and WLAN), invisibility (implicit connectivity management and disconnected operation mode) and uneven conditioning (graceful degradation of network services offered to the application depending on the availability of carriers).

Person-to-person communication. Blue tooth and wireless CORBA

Middleware of choice

This places VIVIAN in a very strong position as the middleware of choice for implementing commercial products in the domain of pervasive computing. Information push technologies (e.g. for advertising purposes), interactions between mobile devices and wearable computers with omnipresent information points (e.g. bus, train or flight time schedules, daily news), development of ubiquitous applications that combine text,

audio and video, as well as applications based on person-to-person communication can all benefit directly from the VIVIAN platform and services. These services have been developed by integrating both CORBA and SOAP (a message-based protocol for object communication) technologies.

Wide range of mobile applications

VIVIAN results support the easy development of applications and services for a wide range of mobile application domains including Customer Relation Management, Electronic Ticketing Systems, Geographic Information Systems, collaborative work, language applications and indoor navigation.

The project partners will continue to exploit the results in new generations of their products in both hardware (e.g. mobile phones) and software (platform components specific to telecom applications). Some examples:
- MEMODATA will target mobile users with advanced products and services and offer new packaged services to telecom operators and portals.
- PALMWARE will expand its products and services by using VIVIAN technology and the VIVIAN component-based approach for specifying, developing and implementing mobile Internet-based applications.
- NOKIA expects to further develop the market for its intelligent PDAs and is transferring VIVIAN knowledge and expertise to its business units for use in advanced products.
- PARAVANT is promoting VIVIAN mobile smart-card solutions among its current customers (banks, credit-card companies and retailers), and using the results of the project in its own payment products.
- PHILIPS is transferring VIVIAN technology to its Product Divisions to enable them to develop chip-sets, components and terminals for their customers (application developers and service providers).