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FOR EUROPEAN ADVANCEMENT

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Contents

1.   Executive Summary

This fifth ITEA Programme Report covers the second half of 2001 (1 July - 31 December 2001). While most of the information presented here relates to this period, newer information has been included as it became available.

The ITEA programme is proceeding at full speed, currently with a fifth Call for Project Outlines. Eight of the projects in the first Call have now been completed, five of them in this reporting period (BEYOND, RTIPA, DESS, PEPITA, and TASSC). The ITEA reviewers as well as those mandated by the ITAC all rated them as excellent, not just from a technical viewpoint, but also in terms of cooperation and dissemination.

Call 1 to 4 comprised 36 projects, and involved 4,634 person-years (breakdown: 70% large companies, 14% SMEs, 6% research labs, 10% universities). Three quarters of the person-years were concentrated in four countries: France (30%), the Netherlands (20%), Italy (14%) and Germany (12%).

Thanks to the new ITEA-ITAC Working Group (set up as a result of a meeting of the ITEA Board and the Directors Committee in June 2001), the exchange of information between ITEA and ITAC and the review preparation process have improved considerably.

In October, our second symposium took place in the "Berlin-Brandenburgische Akademie der Wissenschaften" in the heart of the old city. Participants - impressed by the progress demonstrated in the exhibition and in a number of plenary project presentations - hailed the event as a great success. The next symposium will be held in Amsterdam on 10 and 11 October 2002.

The ITEA Technology Roadmap, which was published in March 2001, is now widely viewed as a major guideline for the development of software-intensive systems. At the symposium in Berlin the excellent work of the roadmap core team was acknowledged with the ITEA Achievement Award. A follow-up is planned, and a somewhat revised core team will deliver the first updates at the end of this year.

The level of R&D activity currently lies between 1,300 and 1,400 person-years per year. However, due to the sub-optimal response to Call 4, we expect an overall decline in person-years over 2002 and 2003. Not only did this Call start at a lower level; a lack of grant funding, especially in Germany, led to a further fall in the number of person-years. This means that the success of Call 5 is crucial. Its opening was communicated to a wide audience - over 2,500 individuals directly (via email) and to many more indirectly (via the national websites and contact lists of ITAC members). The Call 5 Project Outline Preparation Day in January was a success: with many attendees and a wide variety of promising initial project ideas.

As ever, Public Relations and Communications remain important to ITEA. A new Corporate Identity has been defined and is ready for implementation. One result is our very first 'corporate' brochure, which will be published in April 2002. Our website is also a key communication tool, and we are continuously adding content and improving its structure. The aim is for it to become a 'portal', where anyone who needs to know about the ITEA programme can find everything they need.

On behalf of ITEA and MEDEA+, the chairmen of both programmes jointly approached European Commissioners Busquin and Liikanen on improving the cooperation between Eureka and the IST-in-FP6 programme. The chairmen were invited to explore possibilities for further improving cooperation.

At their meeting on 29 November, the ITEA Board welcomed THALES as a new voting member, represented on the Board by Mr D. Potier. For Italtel Mr M. Pignolo succeeded Mr G. Arrigoni. Meanwhile, Mr C. van Mourik has been appointed as our new Office Director; he started work on 1 January 2002. After several months of re-modelling work, the ITEA Office finally moved into new and much more representative accommodation in the same building on the Eindhoven Technology Campus, which itself is upgraded considerably.

2. Overview of the Programme

2.1 Status of the Programme

2.1.1 ITEA ACHIEVEMENTS

In the second half of 2001 our annual Symposium took place in Berlin, Germany. A total of 210 participants attended (66% ITEA internal, 8% Public Authorities, and 26% external invitees). Demonstrations of projects were a great success and some of these were also presented in a session. High-level keynote speakers from Industry and Research underlined the ever-growing role of software in a wide variety of products, systems and services. The participants in the panel session - representatives of Public Authorities - explained how important ITEA is for them and how its work fits in with their national R&D policies. The overall assessment of the symposium was very positive.

During the symposium dinner, the Chairman of ITEA, delivered the first ITEA Achievement Award to the members of the team who produced the ITEA Technology Roadmap on Software Intensive Systems. This award is intended "to highlight achievements within the framework of the Programme that demonstrate most clearly the essence of ITEA: "high-level technical contributions resulting from true European collaboration, leading to significant exploitation results as well as promoting the programme and its goals."

In 2001 the ITEA Technology Roadmap was downloaded 1,200 times from our website, following the public launch on 14 March in Munich, Germany. More than 300 hard copies were distributed.

Through the Office and in cooperation with MEDEA+, ITEA has also participated in the movement towards ERA. To this effect, a common letter has been sent by the Chairmen of the two Programmes to the European Commission to propose better cooperation.

Roadmap download statistics	
USA	28 %
Germany	15 %
The Netherlands	11 %
France	11 %
Italy	8 %
Belgium	5 %
Finland	3 %
Others	19 %

Figure 1:Roadmap download statistics

As explained in the preceding report, the ITEA-ITAC Working Group - whose role is to improve decision-making between the ITAC, BSG, Directors and Board - has started operating. It has pushed forward solutions for aligning the Call process and reducing the lag time between a PO submission and the funding decision. It has also being helpful in facilitating the exchange of information about projects.

The ITEA website is becoming an important link between all stakeholders, containing more and more information. We plan to enhance the site in the year ahead.

An interesting structure has been set up in France, under the auspices of the Ministry of Industry ("ITEA France"). It convenes twice a year, for one day. During these meetings information is presented to attendants (whether they already take part in or are simply interested in knowing more about ITEA) by the Ministry (e.g. re funding situation and perspectives in France, new administrative processes, etc...) and by a representative of ITEA (overall status of the Programme, upcoming events, etc...).

The response to the Fourth Call for Projects has not quite lived up to expectations. This is one of the reasons why a major effort has started to promote the Fifth Call, with a lot of help from ITAC. There is, however, some concern about funding decisions in some countries, which are not in accordance with the opinions expressed by ITAC. This could discourage interested organisations from participating in the Calls.

2.1.2 STATUS OF LABELLED PROJECTS

General data about labelled person-years is shown in Table 1, with details of their distribution shown on the map of Europe in Figure 2. Figures for the four Calls in this table reflect the status as of 01-03-2002, including all approved Full Project Proposals (FPPs) at that date.

The average input per project is still around 100 to 150 person-years. This says something about the precision of ITEA-labelled projects.

	A	B	FIN	F	D	I	NL	E	UK	Other	Total	# Projects
Call 1	15	160	108	610	177	234	484	25	3	45	1860	14
Call 2	0	49	34	175	9	131	80	35	0	40	553	5
Call 3	9	119	91	384	218	124	241	108	17	63	1373	8
Call 4	0	59	91	218	120	143	111	30	17	59	848	9
Total	24	388	324	1388	524	633	915	198	36	205	4634	36

Table 1. Participation (in person-years) per country per call (1st March 2002)

	1999	2000	2001	2002	2003	2004
Call 1	212	837	703	110	0	0
Call 2	0	101	275	177	0	0
Call 3	0	0	388	658	327	0
Call 4	0	0	0	364	436	49
Total	212	938	1366	1309	763	49

Table 2. Participation (in person-years) per year per call (1st March 2002)

Total: 4634 Personyears

324

23   34

39

18

18

915

36

388   542

19

1403   17   24

633

198

32

Israel: 6
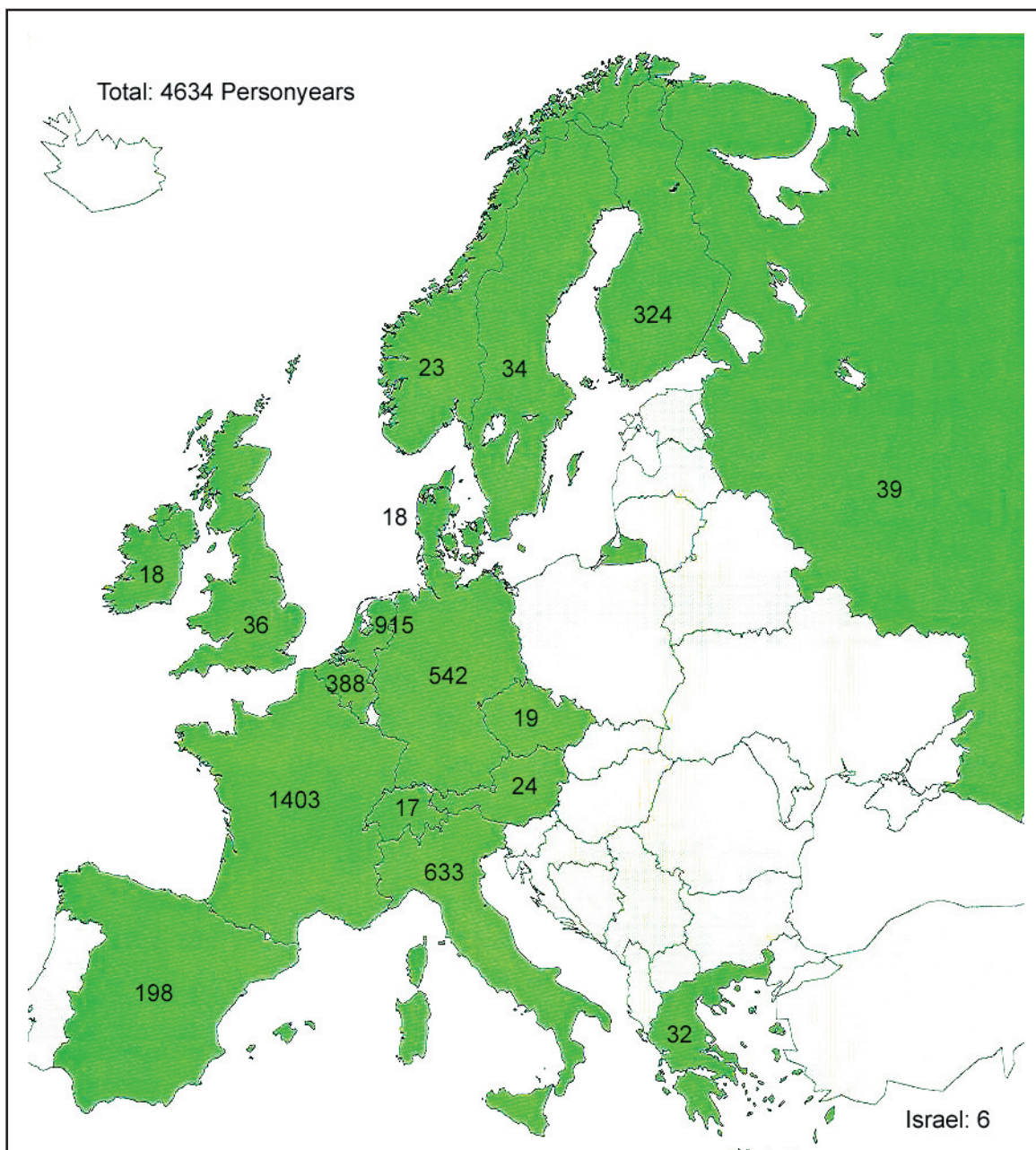
Figure 2: Labeled personyears per country (1st March 2002)

2.2   Developments in the programme environment

This chapter contains information and developments related to the three domains of application in ITEA-related industries that were not covered in the previous Programme Report:

 • Intelligent Home (ITEA Technology Roadmap, pp 79 and following)

 • Mobile (ITEA Technology Roadmap, pp 103 and following)

 • Intermediation Services (ITEA Technology Roadmap, pp 115 and following)

2.2.1 INTELLIGENT HOME

In this section, the current market trends in the Home domain are analysed from three different viewpoints, i.e. Home Entertainment, Home Services, and Connecting the Home.

Home Entertainment

Internet-based peer-to-peer (P2P) file sharing (In particular, the Napster network) made a significant impact on the music industry in 2001. The studios saw it both as a challenge as well as an opportunity. Technically speaking, Napster,

Figure 3

Gnutella, and other such networks, implement only protocols supported by proprietary client software on each peer. Thanks to this simple concept, users can exchange all types of files and data. Nevertheless, the 65% nose-dive in Napster use from February to June 2001 indicated that users are not willing to pay for a service they can have for free using other services[1]. Anyhow, the large music companies have woken up and now offer digital music themselves.

Net-Memory - Even if the exchange of music is still the biggest market of file sharing networks, any data can be exchanged. A new trend is downloading movies. The files provided are pirated from DVD and converted to DivX or a similar highly compressed format. The 'customers' accept the loss of quality for the benefit of (free) movie downloading at any time of the day.

As commercial alternatives (i.e. the new commercial Napster, mp3.com, MusicNet and Pressplay) show, a big market is anticipated. The main motivation for getting music via Internet is the convenience that the customer can select individual pieces of music (not collections as usually on CD) and that the customer can 'shop' any time - the music is directly available. In 2001 there were 4.5 million people in Europe regularly exchanging such files via the Internet.
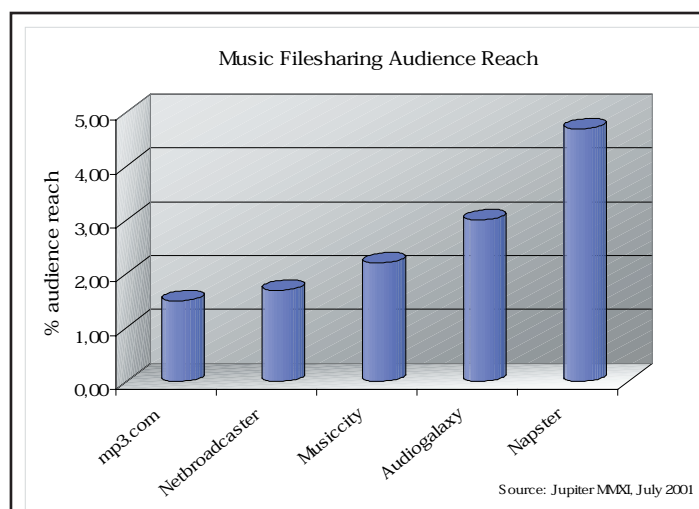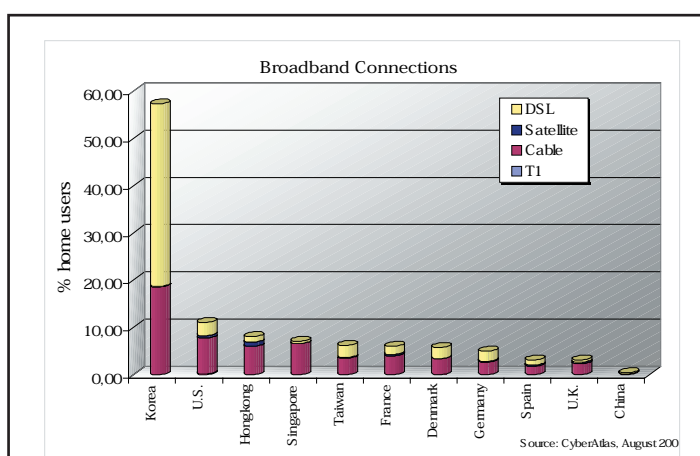
Figure 4

This trend has some technical consequences. First there will be a growing need for fast access to the Internet. The size of the files (music and movies) ranges between 3 to 10 MB (music) and 500 to 1400 MB (movies). For commercial distribution (i.e. DVD-quality movies), the available bandwidth must be increased. Users need broadband access (e.g. DSL). Furthermore there will be a need for fast servers to provide the content.

[1] Jupiter Media Metrix, July 2001

If broadband access for the masses is established[2], the Internet will become the medium of choice to transfer music and movies. Nevertheless, users will want and need a local 'cache', at least for the next years. More on the topic of networking can be found later in this section.

Copyrights - Existing networks show that there is a market for eContent sold over the Internet. The commercial and legal offerings indicate that producers are interested in this market. To curb misuse, Digital Management Rights (DRM) have to be enhanced. New approaches are needed. The Secure Digital Music Initiative (SDMI) and even the High-Bandwidth Digital Content Protection (HDCP) are clearly not safe enough.

Television - MHP is becoming the standard in Europe. In 2001 it got general support from broadcasting commissions all over Europe. Finland has started up Digital TV using MHP and in Germany all major broadcasting companies have accepted MHP as the future standard.

In addition to MHP and DVB, two major Digital-TV systems have been established. "ep" is the Japanese SetTop-Box concept for Digital TV. It is supported by Hitachi, JVC, Matsushita, Sanyo, Sharp, and Toshiba. OpenTV is an established international interactive TV solution based on set-top boxes. So far, 18 million boxes, provided by over 34 manufacturers, have been installed, fed through 45 networks in 50 countries. Another new development in 2001 in the multimedia environment was OpenML. Following the example of OpenGL (a platform-independent graphics interface), the OpenML standard was introduced. OpenML is a platform-independent standard for multimedia applications using graphics, sound and video.

Home Service

The market of home buses, i.e. network infrastructure inside the home to connect different devices, is emerging steadily. Four domains compete in the intelligent homes market: ICT (Information and Communication Technologies), CCCB (Command, Control Communications in Buildings), HEM (Home Entertainment and Multimedia), and HA (Home Appliances). Coming from different domains and each having a different focus, this constellation is hindering the development of a joint standard. Therefore the number of possible or necessary technological standards is also high. The home network can include one or more of three different types of technologies: wired information networks, wired power supply, wireless information networks, plus middleware . Examples of the three types of network technologies can be found in the table below. Nearly all the technologies in each domain exist side by side, because each has a different focus (e.g. ISDN and USB) or because they are market leaders in different international markets (KNX and CEBus). Only a few technologies (such as USB and IEEE 1394 or Bluetooth and WLAN) compete directly.

Through the merger of EIB, EHS and BatiBus (see Table 3) and industry efforts towards standardisation of Bluetooth, some standards are in sight. Nevertheless, there are still a number of incompatible technologies in each domain and no approach covers all domains (e.g. KNX for Europe and CEBus for the United States cover at least two domains). The three major open European systems for Home & Building Automation (Home Buses) have in fact joined forces. EHS/EHSA (European Home Systems / Association) which focuses on appliances and consumer goods, BCI (BatiBus

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2 Following the conclusions in eEurope Benchmarking Report 2002 (http://europa.eu.int/information_society/ eeurope/news_library/new_documents/benchmarking/benchmarking_en.doc) broadband access is steadily

Club International), concentrating on automation of small and medium-size buildings, and EIB/EIBA (European Installation Bus / Association), which targeted the automation of commercial and high-end residential buildings, are now integrated in Konnex (KNX). By now KNX (and its predecessors) has been in the market for ten years. There are 1,000 certified product groups for KNX and 250,000 installations. Altogether KNX has around 150 European member companies.

Wired information networks	Wired power supply	Wireless information networks		Middleware
KNX (EIB, EHS, BatiBus)	KNX (EIB)	DECT		ETS
CEBus [U.S.]	CEBus [U.S.]	Bluetooth		HPnP
ISDN	*PLC* (Power Line Communication)	HomeRF [U.S.](supports DECT)		LON
USB	*X-10*	WLAN (IEEE 802.11a and 802.11b)		HAVi
IEEE 1394 (FireWire/i-Link)	*HomePlug*	*HiperLAN*		VHN
ISO/IEC CD 15018 (Cabling for Homes and small Business (SOHO)				Jini
IEEE 802.3/ISO 8802.3 (Ethernet)				UPnP
HomePNA				
LCN (Local Computer Networks)				

Table 3. Overview of the most important representatives of the intelligent home technologies. Technologies printed in italics yet have no major importance on the consumer market.

In addition to this de facto standard for Europe (which is also expanding rapidly in Latin America and Southeast Asia), there are other Home Buses/Home Automation approaches: the CIC (CEBus Industry Council) standard in the US, and companies that provide these services with proprietary solutions (e.g. Honeywell). Other proprietary solutions offer 're-use' of mobile phones (e.g. Sanyo) or PDAs (e.g. Sony) as 'remote controls' for home devices (e.g. air-conditioning and kitchen devices, etc.). This should be seen as a warning for European industry.

Connection of the Home

The term network is used to describe the infrastructure, protocols and interfaces between users (or their home) and the content provider. Until now no major changes appeared in this domain due to the weakness of the UMTS market. Current trends are the market growth of xDSL (mainly ADSL) and the technological improvements of Power Communication Line (PCL). The common network connection for the home is still the analogue telephone line, even though alternative technologies exist in most European countries. In Germany, ISDN is a widely used medium- bandwidth (128 kBit) alternative, but xDSL is booming. Existing TV cables will be increasingly used to connect to the Internet, also offering possibilities for interactive television. Even the market for Internet access using electrical power lines is growing. The wireless technology of satellite broadcasting, as an Internet connection for broadcasting a huge amount of data (downstream, and nowadays also with back-channelling), is available in most European countries and the US, even if the degree of market acceptance is not yet clear. Some companies have already withdrawn their Satellite DSL offers.

The two European Internet precursors (Germany and the UK)[3] have struggled to maintain their position and enhance Internet use. Deutsche Telekom is investing in further broadband and UMTS Internet access. The expectation is that general broadband access to the Internet will change its dynamics and open up market possibilities in the new economy, in particular, for multimedia and entertainment.

[3] Internet150, PriceWaterhouseCoopers

The trend (identified in the Home Entertainment section) to use the Internet as a content archive, means that more and more home devices can be connected to a computer or directly to the Internet. This requires a stronger connection to a single global data source. Thus, an Internet connection is needed in many parts of the home. This raises the question as to how private homes are connected to the Internet and what kinds of alternatives exist.
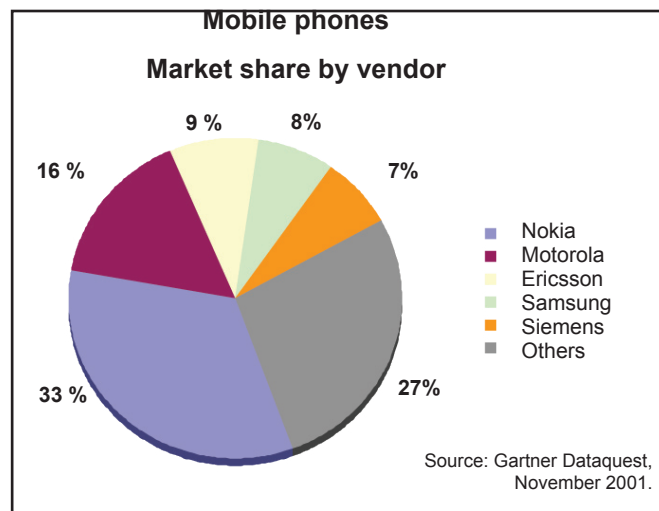
Mobile phones

Market share by vendor

Nokia — 33 %
Motorola — 16 %
Ericsson — 9 %
Samsung — 8 %
Siemens — 7 %
Others — 27%

Source: Gartner Dataquest, November 2001.

Figure 5

2.2.2 MOBILE

In this section, we discuss the Mobile domain from the viewpoints of Mobile Equipment (both wearable and vehicle-mounted), Network technology, as well as available Content and Services.

Mobile Equipment

Wearable Equipment

Mobile Phones

In the past years, one of the most dynamic markets in the world has been the market of mobile phones. In 2001, in line with the general economic development, this trend has come to a slow down. The total number of phones delivered by industry has sunk about 5% in 2001 with respect to 2000 figures. The sales decreased especially in US, Europe or Southeast Asia High growth-rates in some areas, like China reduced the overall loss. In order to fight recession many vendors teamed up: Ericsson co-operates with Sony, Siemens is negotiating with Panasonic, NEC, Mitsubishi, and Toshiba.

Mobile phones have overtaken personal computers in Europe by numbers: while 35% of European households possess a PC, 55% of them own at least one mobile phone4. With the broad availability of GPRS phones, GSM phone vendors and network operators are optimistic that the market will grow in 2002. GPRS services have just started and it always takes time to get to the rapid expansion - it took many years for the extremely successful GSM to take off to the rapid expansion as well.

Personal Digital Assistents (PDAs)

Worldwide Market Share by Vendor in 2001

Palm — 30%
Handspring — 14%
Compaq — 7%
Casio — 6%
HP — 5%
Minren —
Others — 33%

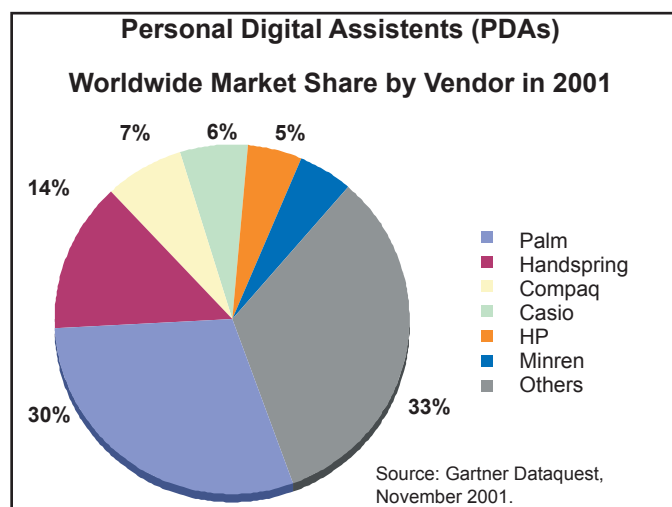Source: Gartner Dataquest, November 2001.

Figure 6

In Japan, NTT DoCoMo, one of the first operational UMTS networks, demonstrates business success with new services. Having more than 40 million subscribers in Japan, NTT DoCoMo formed a partnership with Dutch KPN to assist European carriers in introducing i-mode

based services. I-mode in Europe will face quite different challenges than in Japan, for example due to questions in inter-operability with the planned European-wide inter-operable services and due to the fact that the operator is not in such a decisive position in Europe. Two operators in Europe have opened commercial 3G networks, the Isle of Man and Monaco.

Within the OMA (Open Mobile Architecture) Initiative more than 30 major players have teamed up to specify an open platform of inter-operable industry standards. A common open mobile service middleware is a fundamental enabler to global deployment of mobile services. The middleware will adopt XHTML/CSS as content description language and work towards wireless profiled TCP transport layer protocol as defined in WAP 2.0, both being consistent with Internet standards. Other critical technologies are Java and MMS (Multimedia Messaging Service). This combination of technologies will enable content to be shared by both the Internet and mobile communication worlds.
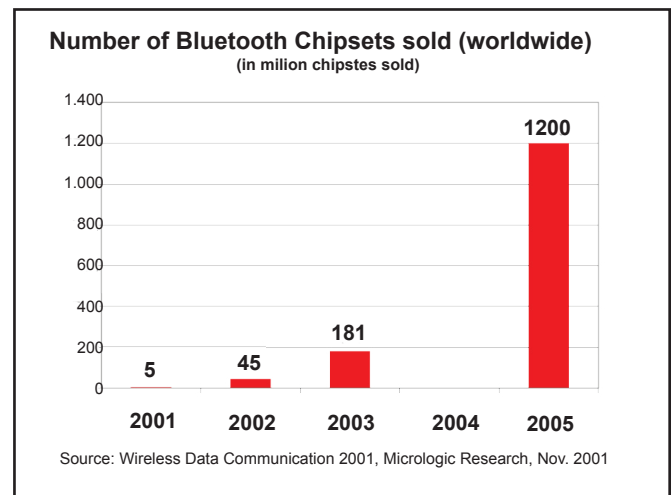

Figure 7

Personal Digital Assistants

A second large domain of digital mobile devices is that of Personal Digital Assistants (PDAs). Clearly separated from the phone market a few years ago, so-called **SmartPhones** have closed the gap between mobile phones and PDAs. Examples are Nokia's Communicator 9210, Ericsson's R380e, or Sagem's WA3050 on the phone side, and the Handspring Treo from the PDA world.

Nevertheless, the different size of the devices and purposes of plain PDA versus phones will not make either of the two disappear. New and upcoming multimedia PDAs come with colour display and large displays that offer video playback and office applications (e.g., Compaq iPaQ 3800). Microsoft's new PDA operating system Pocket PC 2002 allows multimedia applications on PDA such as MP3 audio or MPEG video playback and phone functionality. Currently Palm OS based hand-helds have a dominating position (holding 52% of the market worldwide in 3rd quarter of 2001).

The PDA market shrank throughout 2001, while the SmartPhone market rose - one major reason for this being substantial subsidies in the phone market. Comparing SmartPhone sales with classic PDA sales, Nokia outruns Palm 34 vs 33% in Europe (Source: Catalys).

Other Wearable Devices

There exists a vast range of other wearable devices, only a few of which have high visibility. Examples are digital audio playback devices and the mobile snow pass. Digital audio playback devices mainly use the MP3 standard to store and play back digital music. Bluetooth technology offers wireless earphones and quick download from a network server (e.g. from NewMicros). The Swatch SnowPass is an example of a successful product in a niche market. With the help of the Swatch SnowPass watch, skiers can pay lift fees by simply holding their SnowPass watch in front of the receiver at the lift gates. Swatch engineers have added the chip that is normally placed on a smartcard in a watch. About 50 lift companies in Switzerland and more than 400 worldwide support the SnowPass system.

Other exotic wearables such as eClothing, Smart Clothes, or Augmented Reality applications are still being experimented with or evaluated , but have considerable market potential in specific markets, e.g. supporting technical maintenance in on-site repair of complex devices with Augmented Reality .

Vehicle-mounted Equipment

Nearly all car manufacturers are working on **Internet access in cars**. Some vendors also sell Internet access devices as an option (e.g. Smart, Volkswagen, BMW). However, most cars do not offer random Internet access, but access through a specialized portal, which offers selected location-based services such as restaurant or hotel finders and quick access to content that does not distract the driver.

On-board entertainment-systems are offered for cars, trains and planes to entertain passengers during long trips. Car-entertainment systems comprise everything from DVD players to electronic games, but the market is small and served by specialized companies (e.g. Centurion Electronics, UK). Whereas airlines were once only ranked by better seats or food, in-flight entertainment systems are now becoming more and more of a priority for travelers. Matsushita Avionics Systems controls about two-thirds of the market for advance in-flight entertainment systems. Rockwell Int. Corp. acquired Sony Trans Com with their No 2 product P@assport. The systems offer audio and video-on-demand for up to several hundred individual screens. Online Internet access and email-services are being developed and expected to be installed in the first planes during 2002. Off-line Internet services are already available today, e.g. with the MASMedia(tm) system from Matsushita.

Today, most exact location-based services rely on Global Positioning Service (GPS). GPS-receivers are mass-market products and part of any car navigation system. By linking Internet content or other data with GPS, high-quality location-based services can be offered. Sample products are 'At Road' fleet management, Telcontar middleware, and the GSM Wap portals of network service providers.

Network Technology

While the steps in the GSM roadmap from existing to future network technology are clear for the next years, implementation has been far from the astonishing speed that people got used to during several earlier years. The build-up of GPRS infrastructure took more time than expected, but most GSM operators as well as terminal providers support the packet oriented data communication by the end of 2001.

Bluetooth 1.1 now provides the foundation for wireless communication between a vast number of devices ranging from mobile phones to notebooks. Micrologic Research estimates that from 5 million (in 2001) up to 1.2 billion chip sets will be sold in 2005. The acceptance of Bluetooth in Europe is higher than in other parts of the world[4]. At the moment, users see Bluetooth more as wireless LAN than as universal wireless communication technology.

Wireless local area networks (WLAN, IEEE 802.11b) are complementing UMTS in hot spots, limited local areas with high demand, especially for mobile Internet access. In the US, Starbucks Coffee announced to offer free local access points in its coffee shops. Mobile terminals will connect via WLAN or Bluetooth technology. The British Analyses market researchers expect 20 million Europeans to use public WLANs by 2006. Frost & Sullivan expects turnover of 4.12 US$ in 2001 and 3 billion US$ in 2006 for public WLAN access in Europe[5].

[4] End-User Perseption of Bluetooth, Frost & Sullivan, 2001
[5] Wireless Access In Public Hotspots, Frost & Sullivan, 2001

Contents/Services

Targeting mainly teenagers, who are intense users of mobile communication devices, an alliance has been formed to harmonize games on mobile devices. The MGI (Mobile Games Inter-operability) Forum, with Ericsson, Motorola, Nokia, and Siemens as members, will define a common platform for mobile gaming. Mobile gaming is becoming more and more popular. Whereas early implementations in mobile phones only ran locally, new distributed games incorporate other players on the network - and cost money.

The use of SMS (Short Message Service) is still booming; more than 250 billion messages are expected for 2001[6]. Applications range from Sports results, betting services, lottery-style games, and financial services, to traffic information. Companies use SMS for advertising (e.g. Nescafe and Cadbury). The technology for location-based services is being developed in the USA and also (more slowly) in Europe.

The next generation service EMS (Enhanced Messaging Service) has enhanced features, such as over the air data synchronisation and messages with fixed and animated icons. EMS was developed by Motorola, Alcatel, Siemens, and Ericsson. Since it is a standard, the new picture messages and graphics that will eventually be developed for these phones will be cross-phone compatible. Every handset manufacturer will be allowed to use the format.

Companies aim at achieving an inter-operable messaging standard within the standardisation bodies, like 3GPP, WAP Forum and IETF. The global popularity of Internet email and the success of SMS have led to growing market demand for these technologies to be combined into one open and inter-operable mobile solution.

The next step is MMS (Multimedia Message Service). MMS is expected to be launched in mid 2002. An MMS message can contain any combination of graphics, photographic imagery and audio and video clips. First terminals that are able of handling MMS are announced for the second quarter of 2002 (e.g. Nokia 7650, Ericsson T68). The phones will provide colour screen and camera in order to take and send pictures. NTT DoCoMo already has similar 3G services called FOMA (Freedom Of Mobile multimedia Access) up and running in Tokyo including high-speed data connection, visual communication (pictures), mixed data (I-mode) and speech service (Multi-access).

2.2.3   INTERMEDIATION SERVICES

Intermediation services are services that exchange large amounts of data and information through various media. Four kinds of such services are covered in this section, namely those for end-users, for network operators, for service providers and for public authorities.

Services for end-users

Video on Demand, Auctioning and Online gaming are just three examples of the broad range of services available for end-users. The numbers of users for those services are exploding. Two million people in the USA and 2.5 million in Europe already use Video on Demand. It is expected that these numbers will rise to 7.6 and 8.5, respectively, by 2008[7]. The number of users purchasing from online auctions (e.g. via eBAy or QXL) was expected to be 19 million in the USA and Europe at the start of 2001[8].

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6 Source: GSMworld (www.gsmworld.com), November 2001

7 Video on Demand – Emergin in Europe, Frost & Sullivan 2001

8 Source: www.auctionwatch.com

Goods and services worth around USD 3 billion had changed hands over these websites by that time. Numbers of users involved in computer games are also immense. Play Station (Sony) had 17 million users worldwide at the end of 2001, while Nintendo sold 30 million of its N-64 consoles. The GameCube is its successor. Microsoft, which launched X-box in November 2001, reports about 1.6 million users worldwide in the first months of sales.

Microsoft's X-box, introduced in November 2001, is a platform for On-line gaming. The players of these games are more capricious than PC-users. In particular, their behaviour in downloading new services from the Internet is quite unpredictable. Microsoft has introduced Passport to get more control of this market. Passport is an authentication service that is part of the .Net architecture for online software, which assembles profiles of end-users. Passport is sold to the users with the sales argument that it facilitates transactions on the Internet.

Passport is only one of the many technologies providing end-user services. Others include network transport, protocols and middleware. The impact of Web technology is strongest in particular, at the client level where facilities such as HTML, XML and Java enable developers to create applications and software tools that are both hardware and operation system software independent. Existing software will work with few or no modifications, when new client devices are connected to the system. This is necessary to adapt the many new devices - e.g. such as handheld computers and cell phones - that will be introduced in the next few years. These technologies will also improve accessibility to front and back-office applications and the adaptation of business intelligence for trading partners and customers.

The figure shows steady annual growth. Initially stronger growth was predicted, but Dataquest's recent figures are less upbeat, based on the downturn in the US economy and less optimistic statements by several leading vendors.

The more advanced services for end-users rely on databases. In fact, database systems are the cornerstone of today's e-business applications. A variety of solutions are available for e-business users of database technology. Relational database products from vendors such as Oracle, Sybase, IBM, dominate database use in the operational transactional and business intelligence processing environments. Such products have gained market share for use in e-business applications in recent years and databases are now used to support mobile applications. Solutions based on SQL-driven relational databases require relatively few resources, are easy to install and manage, and are written entirely in Java to provide 'write once, run anywhere' capability.

In particular, the latter issue, portability, is provided by Java-based applications. Java is beginning to play a major role in the e-business implementations of many IT organizations. A recent study by the Cutter consortium[9] shows that 51% of companies surveyed (out of a total of 134 from around the world) were using Java, and an additional 12% are planning its use in the near future. Of the organizations using Java, over 60% claimed project success rates of between 76% and 100%.

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[9] Cutter consortium, e-Business: Trends, Strategies, and Technologies, 2000

Services for network operators

The ITEA Roadmap states that 'network operators need to change from monopolistic, state-controlled towards competitive market-driven' strategies. In Europe this initially went smoothly. Shares in state-owned Telecom companies, such as Deutsche Telekom, KPN and France Telecom, were floated on stock markets when stock values were booming. However, the costs for buying UMTS licences and the need to compete with subsidiary cell phones to gain and hold market share have endangered the financial position of many of these companies. Rapidly falling share values were the result.

In the United States, competition among mobile phone companies is high, with six national companies active in the wireless market. Most US wireless companies are also on the verge of heavy capital investment to upgrade their networks. Any pairing-up among wireless companies is expected to be around technological compatibility. Cingular and AT&T Wireless are both in the process of converting their TDMA networks to the GSM standard, while VoiceStream, owned by Deutsche Telekom, already uses GSM[10]. Meanwhile, the situation for Telecom operators in Africa and south-east Asia is much better, as stated earlier.

There are still opportunities for network operators in Europe. One of the drivers for new opportunities is SIM/smart cards, which will soon become multi-application cards. IDC[11] and Dataquest estimate that around 615 million smart cards were sold worldwide in 2000. Frost & Sullivan is more optimistic and estimates that 1,790 million cards have been sold and expect this number will increase to 3,666 million in 2004. An interesting characteristic is that SIM cards for cell phones have a 15% market share. This opens up opportunities for Telecom operators, who can provide additional services to the SIM card. One of these might be billing. Frost & Sullivan think that SIM cards will also become cash cards in the near future. Telecom providers can then use their networks and billing systems to compete with banks.

Security is vital for network operators. Nowadays a lot of banking and e-commerce transactions are protected by encryption. The current standard is Data Encryption Standard (DES). However, given the aggressive attacks on networks that are protected by this standard, it already looks out-of-date. Gartner states that 'DES has reached the end of its life'. AES (also known as Rijndael), a candidate for its replacement selected by the National institute of Standards and Technology (NIST) -is expected to become the standard, instead of other algorithms such as Mars, RC6 or Serpent that are considered more efficient. Despite DES' vulnerability, AES is not likely to replace more than 30% of DES operations before 2004 according to Gartner[12].

Another development relevant for security, in particular, in the context of September 11th, is the improvement of border control systems. An example is iris recognition at Amsterdam's Schiphol and London's Heathrow Airports. Passengers' iris scans are stored on personalised smart cards. The new iris scan border control system is part of a premium service programme for frequent travellers. The smart card also has parking and check-in facilities. With this card, the airports are able to offer a higher level of service (faster throughput) to frequent flyers.

10 Waters, R., FCC lifts spectrums caps on US wireless carriers, November 2001, www.ft.com
11 IDC, European Smart Card Market, 1998 – 2005, July 2000
12 Wheatman, V. & J. Pescatore, Plan to migrate to advanced encryption standard, briefing Gartner, November 2001

Services for service providers

The larger service providers provide Internet backbone connections. Top-rated providers which guarantee network uptime are UUNET, WorldCom, Sprint, AT&T and Level 3. It is generally expected that these providers will focus on delivering the basics, instead of providing 'full motion video' or 'multimedia'. Their profits will come from low-cost Internet access for existing low-bandwidth applications. Gartner expects that a few major providers, including AT&T and Sprint, have the resources to continue building market share. Many of their competitors will seek partnerships with large bandwidth providers, such as Telecom operators and online services.

Beta versions of .Net-server, released in November 2001, also represent an interesting step for service providers. .Net-servers support XML and Microsoft's framework for complex Internet applications. The servers facilitate data exchange and communication between several applications on the Internet. Other industry standards will be supported too, such as SOAP, WSDL and UDDI. This type of server contributes to developments in front-end-web as well as web hosting. They will also support improved multimedia functions on Window Media Services.

Services for public authorities

eGovernment enables departments to communicate with each other (G2G) or with the business community (G2B), as well giving citizens access public services (G2C). eGovernment not only refers to online service, but, in particular, to electronic transactions. Open Internet standards, such as XML, drive the public sector towards the sort of transformation that has already been seen in the private sector in recent years.

Many governments are active in eGovernment at the moment. Initiatives have started all over the world, e.g. in the UK, the USA and Singapore[13].

A study by Accenture in April 2001 ranked Canada as being first among 22 countries for the maturity of its eGovernment services. The Accenture study distinguishes four categories. 'Innovative leaders' stand out with a large number of services. They have an overall maturity higher than 35%. Canada, Singapore and the USA are regarded by Accenture as innovative leaders. 'Visionary followers' are countries where services have started to grow, based on existing online services. They have an overall maturity between 25 and 35%. Norway, Australia, Finland, the Netherlands and United Kingdom are regarded as visionary followers. 'Steady achievers' generally provide a large breadth of services, but achieve significant growth through maximising potential online services, and growing Delivery Maturity. 'Platform builders' are at a low level of online service, but have considerable potential to develop a coordinated cross-agency web presence. The difference between 'steady achievers' and 'platform builders' is less obvious than between the first two categories. Accenture denotes New Zealand, Hong Kong, France, Spain, Ireland, Portugal, Germany and Belgium as being steady achievers. The remaining eight countries are platform builders.

The World Bank sees eGovernment as presenting an opportunity for administrations in less developed countries to leapfrog technological developments. The Gateway initiative[14] - supported by the World Bank - exchanges knowledge on this topic. Its goal is to reduce poverty and support sustainable development through the use of information and communication technologies (ICT).

[13] http://www.ida.gov.sg/

As with eBusiness in general, successful eGovernment is, at most, 20% about technology and 80% about people and organisations[15]. A study carried out by British Telecom in the United Kingdom[16] confirms this by concluding that fundamental changes in the public sector's traditional structures and practices and in the relationship between a state and its citizens are required. For example, complicated administrative procedures require a back office reorganisation to transform complex transactions into simpler ones[17].

A study of the European Commission[18] on eGovernment service delivery found that eGovernment providers consisting of a single administrative unit only, e.g. income tax or job search, have a higher level of online service delivery than eGovernment departments that have more of such units. The survey also found that services provided by decentralised local agencies are less well developed. Some of the service providers have well developed online systems, but the average performance was brought down by those that are not yet online.

2.2.4   GLOBAL ASSESSMENT

We can see clear confirmation of our vision and strategy in this environment:

- The convergence of broadcast and IP networks is being explored in numerous ITEA activities from the management of DTV networks (including the return channel) to enabling the possibility to download Internet content over a Broadcast network or DTV content over the Internet. R&D being carried out includes difficult real-time features.

- MHP has, from the start, been a basic building block in ITEA. Continuous efforts are focused on enhancing the MHP standard and projects built on it include future-oriented applications.

- Great efforts are being made on enabling software and platforms for intermediation services, not only for "classical" services, but also methods and tools are being developed in order to take into account adaptive services that will include the downloading of applications. Special attention is devoted to security aspects.

For details of where individual ITEA projects fit in the present landscape, see fact sheets (Appendix C).

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[14] http://developmentgateway.com/

[15] www.ft.com, June 2001

[16] British Telecom, eGovernment: ready or not?, July 2000

[17] European Commission, eEurope Benchmarking Report, Brussels, 2002

3.   Steering Group Report

3.1   Introduction

During the period covered by this report, five projects have successfully reached a conclusion: Beyond, DESS, RTIPA, Digital Headend and ESAPS. The results of two of them are being used in two new projects (CAFÉ from ESAPS and Empress and Moose from DESS). A follow-up from Beyond has been cancelled (although recommended by ITAC, MyUI Everywhere has been labelled, but not funded in Germany, which was crucial to the project).

All projects from Call 3 have started. Discussions are under way about the funding of a number of Call 4 labelled projects. Many uncertainties appear to cloud the perspectives for funding in some countries.

3.2   General information about projects

3.2.1   OVERVIEW

Statistics

Table 4 provides a status overview of the projects resulting from the first four ITEA Calls. Eight projects from Call 1 were finished last year and have now had their second and final review. The other six will finish during 2002. After several attempts, the Cascade project finally had to be wound up, due to a lack of funding in Germany and, as a result, no funding in France. This brought the final number of projects cancelled in Call 1 to four, the others being Agentworks, Caaim and Autogo. In Call 2 five projects are up and running. Two projects in Call 2, Ekstasi and Micado, were cancelled. All projects from Call 3 are up and running. Most Call 4 projects are in the start-up phase (applying for funding). For MyUI no funding is available in Germany and therefore the project will probably be stopped. For a more detailed overview of the projects per Call, see Appendix E. Fact sheets and report summaries of the 24 reporting projects can be found in Appendix C and D. A progress report is available for those projects, which were running for at least four months in the second half of 2001.

	Labelled	Running	Cancelled	Finished	Reviewed	Reporting
1st Call	18	6	4	8	14	11
2nd Call	7	5	2	0	5	5
3rd Call	8	8	0	0	0	8
4th Call	10	4	(1)	0	0	0
Total	43	23	7	8	19	24

Table 4: ITEA project status

Project reviews

During the reporting period there were nine reviews, including two final ones, for BEYOND and RTIPA. Both projects were finished successfully with a good review and attractive demos.

Based on the feedback we received from the external expert reviewers, project review guidelines were set up in cooperation with the ITEA Steering Group and distributed to the project leaders, their mentors and the ITAC members. The main improvement is that reviewers receive more - and more detailed - project documentation in advance in order to prepare better for the review.

The resolutions and actions agreed at the end of each review as well as the external expert reviewer report are provided to the ITAC members via a restricted area on the ITEA web site.

3.2.2   MAJOR CHALLENGES

Of the three challenges mentioned in the preceding report, two are on their way to be successfully resolved:

- Working together with ITAC has produced a leaner procedure and a schedule that fits the needs of the PAs for prior knowledge and insights and allows for better communication during the Call process.
- Revisiting the Review procedure has brought greater transparency in the communication of documents. The overall process seems now to suit all participants.

There still remains the third dilemma: "the Programme is looking for a stable and faster procedure for financing; better synchronisation of the various national approaches is very important."

As the first set of projects were completed, a new challenge appeared: how can ITEA help in the dissemination of their results?

3.3   Progress in the ITEA Programme

3.3.1   THE WIDER CONTRIBUTION OF ITEA PROJECTS

This section contains concrete examples showing how ITEA projects are supporting European industry in taking a leading position in software-intensive systems. The Technology Roadmap on Software Intensive Systems[18], defines categories of technological challenges. They are used here to classify the projects. The categories provide a more concise picture than the six core competencies from the ITEA Rainbow book.

Please note that only projects that were not covered in previous Programme Reports are discussed below.

Data & Content Management

This category includes technologies that allow the end user and application layer software to work more easily with data. Data is thus transformed into "knowledge". The projects presented in this section support this transformation in some important way.

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[18] Available on the ITEA Website

With the convergence of Internet, mobility and multimedia, the development of intermediation frameworks and services between heterogeneous distributed objects is a major challenge. In the multimedia domain, intermediation services such as trusted third parties, search engines, translation services, cataloguing services, certification agencies for different specialized services, etc., will enable content mining by several interacting communities. In any case, many technical (configurability, security, inter-operability, performance, evolution management, content processing...), legal (Intellectual Property Rights) and engineering (architectures, standards, methodology and tools) issues remain to be solved.

The goal of **KLIMT** is to define, develop and validate a networked Knowledge Management Platform providing infrastructures, frameworks and intermediation service architectures to support open virtual communities. The project will tackle three main aspects:

- Architectural: by developing distributed middleware infrastructures able to cope with the flexibility of the underlying infrastructure;

- Engineering: by developing generic services to support collaboration activities over the network, and addressing issues such as thematic groups properties (rules to cooperate, security, privacy, user profiling...), distributed knowledge management, homogeneous data presentation, etc.;

- Content processing; by defining the value chain needed to extract the proper information to help with decision-making, using emerging networked technologies (distributed processing over the network, cache technologies, text mining, data mining, video mining, etc.).

Network transport and protocols

This category focuses on the transfer of information. Projects presented in this section deal with technologies that transport digital data from one place to another.

Technological advances are transforming simple objects into intelligent ones, by giving them the ability to perceive their environment, process information, make decisions, and communicate. This is especially relevant for all the entities of a network (routers, protocols, network management and value added network services), that will need distributed cognition and intelligence. To accommodate the needs of the next generation of services, the "portfolio" of transport and data delivery solutions available over IP networks appears today to be extremely small, and scarcely sufficient to meet expected market needs. Empowered with modern programming tools in new, more open network architectures, future telecommunication services (advanced high-quality voice, data, and video services) will need the ability to be created, re-configured and customised dynamically in response to rapid changes in network infrastructure, markets, user demand and competition.

The goal of the **POLLENS** project is to provide network operators with flexible means to envisage, design, and explicitly program enhanced transport and network services over IP. The project will develop a flexible and dynamic middleware platform to explicitly programme novel traffic control solutions and scheduling mechanisms, configure network architectures on the fly, and add intelligence to the IP routers to support future value-added services. Central to this goal is the utilisation of open programmable interfaces on top of intelligent and programmable devices such as IP routers.

Network and distributed management

Roaming users and distributed services require a dynamically changing network infrastructure. Projects in this category cope with the management of the problems that are arising in this domain e.g. network configuration, network cooperation, basic management, virtual computing and ubiquitous networks.

With the latest advances in the automotive industry, , a whole range of electronic functions has been introduced such as navigation, adaptive control, traffic information, traction control, stabilisation control, etc. Nevertheless, these functions are nowadays mostly stand-alone, although some sensor information is shared: today, every vehicle manufacturer is developing its own integration framework for software interfaces, communication interfaces, tool-environment. One of the main challenges is therefore to integrate different electronic systems, subsystems, modules and components, delivered by different suppliers into a complete network of a vehicle system.

The goal of the **EAST/EEA** project is to enable such electronic integration, through the definition of an open layered software architecture enabling hardware and software inter-operability. Specific subsystems or components will then provide additional cost-efficient services and features, which could not be achieved as stand-alone systems with dedicated hardware and software. The interfaces to a related tool environment and the interface between tools will also be addressed by the project, resulting in significant reductions in version development times and improvements in product quality.

Engineering

System Engineering

Complex system engineering in the ITEA context is defined as the set of methods, techniques and tools that support the construction and control of complex, software-dominated systems over their entire life cycle. Projects presented in this category develop and enhance these methods so that they can also be used as a basis for effective tool support in order to overcome the problems of modern system development.

Ambient Intelligence is an exciting new paradigm in information technology, in which people are empowered through a digital environment that is aware of their presence and context, and is sensitive, adaptive, and responsive to their needs, habits, gestures and emotions. Ambient Intelligent environments are characterised by ubiquity, awareness, intelligence, and natural interaction. These highly complex systems build on advanced networking technologies, which allow robust, ad hoc networks to be formed by a broad range of mobile devices and other objects (ubiquitous or pervasive computing). By adding adaptive user-system interaction methods, based on new insights into the way people prefer to interact with computing devices (social user interfaces), digital environments can be created which improve the quality of life by acting on our behalf.

The goal of the **AMBIENCE** project is to enable the creation of networked Context Aware Environments, by defining the appropriate architectures, methods and tools needed to develop a new generation of products and services that are aware and intelligent. To validate its concepts, the project intends to integrate the required technologies into operational systems for domestic and professional in-door domains.

System families are strategic assets that can be used for European advancement. Many prime export products are based on system families. As the importance of technology increases, most of those products have become information-intensive. Unfortunately software-engineering technology has been developed mainly for creating one product at a time, and existing process models do not adequately address the needs of system family development. The structuring of systems in product families makes it possible to share design effort within the product family, and therefore counters the impact of the ever-growing complexity. This makes it possible to sustain, or even increase, the rate of product introduction. Within the ITEA project 99005, ESAPS, several European companies have investigated and developed technology for system families and gained significant experience in this domain.

The research that will be performed in the **CAFÉ** project will expand on the results of ESAPS by providing methods and processes that support independent life cycles of products and of systems using these products. The main challenges are to introduce the technology on a wider scale, to verify and efficiently validate the assets built during product family development, and to improve the overall management of the assets themselves. CAFÉ will also study new aspects that were not covered within ESAPS, namely organisational issues, asset management, validation and testing, and traceability improvement for impact analysis.

Software Engineering

Software engineering includes all the methods and technologies that deal with the planning, specification, construction, testing and maintenance of software. Projects presented in this section provide a major methodological contribution for software engineering.

So far, embedded systems have been based on proprietary solutions. This has slowed down the introduction of new services and increased inter-operability problems. Other areas have shown that this mode of operation cannot compete with the network economy model, where each participant focuses on a single role. For example, the IC technology domain made a lot of progress in defining interface standards at different abstraction levels and a development methodology, allowing for the interchange of hardware components for the systems-on-silicon development process. This approach served as a catalyst in enabling IPR (intellectual property right) trading in that market place.

The **ROBOCOP** project adopts a similar approach for embedded software technology, aiming to define a component framework for the middleware layer of high-volume embedded appliances (e.g. cellular phones, PDAs, set top boxes, network gateways, and digital television sets). This approach will enable vendor-independent trading of IPRs for software components in the embedded application domain, and support developments based on constrained, robust, reliable and manageable components.

3.3.2   SPECIFIC PROJECT PROGRESS

The ITEA project leaders have reported continuously on the progress of specific projects. See Appendix C for the project fact sheets and Appendix D for the Abstracts from their progress reports.

4.   Facts & Statistics

With the projects currently being reported, ITEA is active in 18 countries. Engaged in these countries are the 11 ITEA Founding companies, 75 other large industries, 87 SMEs. Public research institutes and universities have provided 74 participants.

This chapter provides breakdowns by country, the state of funding by country and cumulative effort by project.

4.1   Project status

Project name	Project number	# of CRs	# of Reviews	Status
Call 1				
Athos	99001	3	1	Running
Beyond	99002	2	2	Finished [1]
BRIC	99003	3	1	Running
Co-Var	99019	3	1	Running
DESS	99012	2	2	Finished [3]
Digital HeadEnd	99006	2	2	Finished [2]
ESAPS	99005	2	2	Finished [2]
Europa	99004	2	1	Running
PEPiTA	99007	4	2	Finished [3]
RTIPA	99011	2	2	Finished [3]
Softec	99029	1	2	Finished [2]
TASSC	99022	1	2	Finished [3]
UmsdL	99028	1	1	Running
VHE-Middleware	99013	2	1	Running
	subtotal	30	22	

Project name	Project number	# of CRs	# of Reviews	Status
Call 2				
@Terminals	99030	3	1	Running
Netcare	99033	2	1	Running
Sophocles	99038	1	1	Running
TESI	99036	3	1	Running
Vivian	99040	2	1	Running
	subtotal	11	5	

Project name	Project number	# of CRs	# of Reviews	Status
Call 3				
Ambience	00003	3	-	Running
Café	00004	2	-	Running
Digital Cinema	00005	1	-	Running
EAST-EEA	00009	1	-	Running
Homenet2Run	00002	2	-	Running
KLIMT	00008	1	-	Running
Pollens	00011	1	-	Running
Robocop	00001	1	-	Running
	subtotal	12	0	

Project name	Project number	# of CRs	# of Reviews	Status
Call 4				
3Dworkbench	01012	-	-	Running
AdaNetS	01001	1	-	Starting
EMPRESS	01003	-	-	Running
HIISC	01005	1	-	Starting
Hyades	01010	-	-	Starting
MOOSE	01002	-	-	Starting
MyUI Everywhere	01008	-	-	Stopped
Prompt2Imp.	01009	-	-	Running
Proteus	01011	-	-	Starting
VACCAT	01004	-	-	Running
	subtotal	2	0	
Total		55	27	

Table 5. Project status

Note:

1. Per 1 September 2001

2. Per 1 July 2001

3. Per 31 December 2001

CR: Change request

4.2 Project participation

Project name	Project	ITEA	IND	SME	RES & UNI		ITEA	IND	SME	RES & UNI
		# of partners					% of effort			
Call 1										
Athos	99001	3	1	1	1		89	3	5	3
Beyond	99002	4	0	3	4		66	-	15	19
BRIC	99003	3	2	2	1		76	13	4	7
Co-Var	99019	1	2	6	0		9	11	79	-
DESS	99012	7	1	4	7		49	7	20	23
Digital HeadEnd	99006	-	-	-	-		90	-	6	4
ESAPS	99005	-	-	-	-		70	6	3	21
Europa	99004	6	1	0	2		90	5	-	5
PEPiTA	99007	4	1	1	4		71	5	7	17
RTIPA	99011	5	1	3	6		73	7	10	10
Softec	99029	-	-	-	-		55	20	25	-
TASSC	99022	2	4	1	2		47	40	7	6
UmsdL	99028	0	0	2	1		-	-	88	12
VHE-Middleware	99013	6	1	1	2		73	8	8	11
subtotal		11	14	31	32		71	8	9	9

Project name	Project	ITEA	IND	SME	RES & UNI		ITEA	IND	SME	RES & UNI
		# of partners					% of effort			
Call 2										
@Terminals	99030	5	3	2	2		66	14	11	9
Netcare	99033	0	4	2	0		-	70	30	-
Sophocles	99038	3	1	2	3		40	11	22	26
TESI	99036	2	3	7	0		38	27	35	-
Vivian	99040	2	3	3	3		22	32	26	20
subtotal		5	13	16	8		41	24	24	11

Project name	Project	ITEA	IND	SME	RES & UNI		ITEA	IND	SME	RES & UNI
		# of partners					% of effort			
Call 3										
Ambience	00003	5	5	2	6		55	20	7	18
Café	00004	5	3	3	10		63	14	5	18
Digital Cinema	00005	2	3	3	1		31	36	27	7
EAST-EEA	00009	5	11	1	4		34	49	2	15
Homenet2Run	00002	9	6	1	3		69	22	3	7
KLIMT	00008	1	2	8	3		20	21	43	15
Pollens	00011	2	1	1	3		57	14	10	19
Robocop	00001	2	3	2	3		54	21	11	14
subtotal		9	34	20	27		51	25	10	14

Project name	Project	ITEA	IND	SME	RES & UNI		ITEA	IND	SME	RES & UNI
		# of partners					% of effort			
Call 4										
3Dworkbench	01012	1	1	7	2		5	3	79	13
AdaNetS	01001	3	2	2	3		55	18	14	13
EMPRESS	01003	6	2	5	12		34	8	14	45
HIISC	01005	0	0	2	3		-	-	57	43
Hyades	01010	2	2	3	2		30	20	38	12
MOOSE	01002	2	4	3	4		22	32	6	40
Prompt2Imp.	01009	2	0	1	4		47	-	25	28
Proteus	01011	0	5	3	6		-	42	22	36
VACCAT	01004	0	3	2	6		-	22	32	46
	subtotal	9	16	26	35		26	18	25	13
Total		11	75	87	74		53	17	14	16

Table 6. Project participation

Note:

1. ITEA: ITEA Founding companies

2. IND: Other large industry

3. SME: Small- and Medium Enterprises (<250 employees)

4. RES & UNI: Research Laboratories and Universities

4.3   Summary of completed versus planned efforts

The project progress reports of January 1st, 2002 contain actual figures for person-years. The table below shows these figures against the planned figures of the FPP after Change Request on January 1st, 2002.

The planned figures present the annual estimates as defined in the FPP. The column 'Spent' gives the actual figures as reported in the project progress reports per half year and total per year.

Project	1999		2000		2S 2001		Total 2001		2002
	Plan	Spent	Plan	Spent	Plan	Spent	Plan	Spent	Plan
Call 1									
Athos	-	-	48,5	37,3	nc	40,0	86,0	68,3	26,5
Beyond	19,3	13,8	62,5	63,6	10,5	10,5	42,2	46,7	-
BRIC	-	-	31,5	23,4	32,1	nc	52,5	nc	24,5
Co-Var	-	-	6,5	nc	7,7	4,2	10,9	14,9	9,9
DESS	25,8	7,8	64,5	60,5	nc	21,3	38,0	54,3	-
Europa	23,3	23,1	89,8	90,4	38,8	33,8	77,5	67,6	23,5
PEPiTA	12,7	11,9	61,5	55,9	18,8	14,0	32,3	14,9	-
RTIPA	34,3	28,5	143,3		43,0	53,0	116,1	129,0	-
TASSC	-	-	67,2	nc	nc	nc	56,3	nc	-
UmsdL	-	-	7,0	7,0	9,1	4,2	9,2	8,7	12,9
VHE-MW	1,3	3,1	52,4	24,6	24,3	23,6	81,2	nc	12,2

Project	1999		2000		2S 2001		Total 2001		2002
	Plan	Spent	Plan	Spent	Plan	Spent	Plan	Spent	Plan
Call 2									
@Terminals	-	-	8,7	9,3	43,2	40,9	73,8	70,5	69,3
Netcare	-	-	13,9	10,1	14,9	14,6	23,6	36,7	8,3
Sophocles	-	-	28,4	nc	15,7	15,0	64,9	23,8	30,7
TESI	-	-	38,5	36,2	40,5	32,2	76,1	59,5	50,9
Vivian	-	-	11,0	11,3	18,3	>18,6	36,5	>30,4	18,0

Project	1999		2000		2S 2001		Total 2001		2002
	Plan	Spent	Plan	Spent	Plan	Spent	Plan	Spent	Plan
Call 3									
Ambience	-	-	-	-	39,1	35,8	42,6	35,8	87,1
Café	-	-	-	-	71,8	71,6	71,7	71,6	139,4
Digital Cinema	-	-	-	-	16,1	17,6	29,4	17,6	35,8
EAST-EEA	-	-	-	-	41,6	24,8	48,7	24,8	107,7
HomeNet2Run	-	-	-	-	57,1	55,5	107,0	101,8	114,6
KLIMT	-	-	-	-	nc	nc	34,7	nc	58,9
Pollens	-	-	-	-	23,0	18,2	27,8	18,2	58,0
Robocop	-	-	-	-	27,0	24,6	26,0	24,6	56,5

Project	1999		2000		2S2001		Total 2001		2002
	Plan	Spent	Plan	Spent	Plan	Spent	Plan	Spent	Plan
Call 4									

Table 7. Completed vs. planned efforts (in person-years)

Note: planned figures according to FPP

4.4   Support for ITEA projects per country

All the funding issues for most Call 1 and Call 2 projects has not change dramatically since the previous report. Therefore the funding tables are excluded from this report. For Cascade, funding in Germany was not granted, which led to a negative funding decision in France as well. Without funding in these two major countries, the Cascade project team had to take the decision to stop this project.

At the end of this reporting period it became clear that the budget for funding in Italy was very limited. All application requests have been put on hold for the moment. This mainly affects the projects UMsdL, TESI, and Sophocles. For UMsdL, which is trying to bring two Italian companies on board, this has had a major impact, endangering the continuity of the project, as there is only one French company left.

The funding situation for Call 3 and Call 4 is described in the tables below, as delivered by ITAC, per country on 23-01 2002.

	Remarks ITEA Office	A	B/FL	D	EC	Fin	F	I	NL	E	UK	RoE
Call 3												
Ambience		Y?	?	No		Y/Y/Y	Y	Y	Y/Y		Y?	
Cafe		Y		Y		Y	Y	Y?	Y/?	Y		
Digital Cinema			Y	?		Y	No		Y/?		Y	
East				Y			Y	Y				
Homenet2run			Y	Y			Y	Y?	Y/?			
Klimt							Y?	Y?		?*		
Pollens							Y	Y?				
Robocop[3]	No funding in B		?*			Y			Y	?*		

	Remarks ITEA Office	A	B/FL	D	EC	Fin	F	I	NL	E	UK	RoE
Call 4												
Adanets	No German funding			?			?*	?*	Y?			
Moose									Y?			
Empress			?*	Y ?			?*	?*	Y?			
Vaccat			?				No		?			
Hiisc	Delay of 5-6 months due to negotiations with Russian Ministry							?*				
MyUI Everywhere	No German funding	?*	?*	No ?					Y?			
Prompt2Implementation							?*					
Hyades							?*	?*				
Proteus	Main partner Alstom stepped out of project			?			?*	?*				
3D-Workbench			[4]	?			?*					

Table 8. Public support per project per country

Notes:

Y :   yes (contract exists or preparation start soon)

Y? :   positive but add. Info needed before contract

Y/Y/...: situation by partners with own contract

No :   No

No? :   rather negative but could change

? :   no position yet

?* :   no application received

self :   self financing by companies

1:        Partners from Belgium / WL

5. Public Relations/Communications

In 2001 we improved our communication with key target audiences. More communication tools have been employed to inform European stakeholders (potential partners, the Public Authorities and the Press) and to attract new participants. We developed more and better contacts with the press, resulting in wider press coverage.

At the end of 2001 the first steps were taken to make our communication more effective and professional, strengthening the image of our organisation by ensuring clear, consistent messages that emphasise the strategic importance of ITEA for European industry, the potential of our programme, and our successes so far.

One of the results of this process is the definition of a new Corporate Identity for ITEA, which will be implemented from April 2002 onwards, ensuring a consistent image across all carriers, from stationary to website to PowerPoint presentations, leaflets, reports, etc.

5.1 Means of communication

We have identified and are defining a range of carriers for communication. The two most important of these are reported here.

5.1.1 ITEA BROCHURE

Our very first 'corporate' brochure will be published in April 2002. In this brochure we have developed an identity for ITEA that is appropriate to its role as a leading player in its field.

5.1.2 ITEA WEBSITE

Our website is a key communication tool for effective and efficient exchange of information. A new structure and improved content have been defined, in combination with the new visual identity, to create maximum impact. The aim is for it to become a 'portal', where anyone who needs to know about the ITEA programme can find everything they need. Some information will continue to be confined to a protected environment with password access (with different levels of permission for different audiences). A full redesign of the public part of the site will be 'on air' mid 2002.

Some ITEA projects have their own websites. Links to these websites are included in the project fact sheets in the project area on our website.

5.2   Events

In the reporting period there were two major ITEA events.

5.2.1   SYMPOSIUM

Our annual symposia are a perfect platform for getting - and keeping - in touch with key target audiences. The main goals are to communicate the status, strategic importance, impact, and potential of our programme to the wider public, and to create opportunities for ITEA partners to interact and learn from each other.

Our 2nd Symposium was held on 11-12 October in Berlin, Germany. It was the first full showcase of ITEA projects:

- ESAPS, ATHOS, DHE, and Co-VAR were the subject of plenary project presentations. The overall assessment was good, but there is room for some improvements.

- The exhibition, which included demonstrations of 25 projects (12 on posters and 13 fully fledged demos), was described as "very interesting", "informative", and "a good platform to demonstrate project progress and results." At our next symposium there will be more time for reviewing projects as well as guided tours.

The press conference was pretty much a non-event. In spite of initial positive reactions and confirmations of attendance (during follow-ups to the initial invitations), only two journalists attended. The 11 September event and the anthrax threat may have had some influence. A press package was sent to 150 editors after the event.

5.2.2   PREPARATIONS FOR THE 5TH CALL

We started pre-announcing the 5th Call at the end of November, in close cooperation with the ITAC members. The opening was communicated to a wide audience: directly via an email message and reminder to more than 2,500 individuals, and indirectly via contact lists and national websites of the PAs and publications/websites of other third parties such as Cordis (see Table 8 for an overview). The Call 5 Project Outline Preparation Day was very successful.

5.3   Media relations / Press contacts

Via the press we can reach a wide range of target audiences that are important for ITEA. We are setting up a systematic press approach to ensure that ITEA is better known by the European press and to build up and strengthen (individual) media contacts. There is clearly room for improvement here.

5.3.1   PRESS COVERAGE

This overview, including the actual text, is available at our website under "ITEA in the press".

Article	Publication	Language	Date
Clustering the future of Europe's IT	Eureka News	English / French / German / Italian / Spanish	October
La France, leader du programme européen sur les logiciels	Electronique International	French	8 November
„Eingebettete" Software steuert unsichtbar unser Leben	VDI nachrichten	German	16 November
Technologies de l'information	La Lettre Européenne du progrès technique	French	December
ITEA Progress and calls for greater co-operation	Eureka News	English / French / German / Italian / Spanish	December
ITEA Achievement Award	Password magazine	English	January 2002

Call 5 Coverage

Article	Publication	Language	Date
5th Call for Proposals	EUREKA/COST-Bureau website	English	5 November
European ITEA program calls for project outlines	Embedded News	English	5 December
European ITEA program calls for project outlines	Website Embedded Control Europe ECE	English	5 December
Fifth ITEA call for Project Outlines	Eureka Website - What's new	English	5 December
Eureka project calls for information technology proposals	Cordis Website – RTO-News	English / French / German / Italian / Spanish	6 December
R&D dans le domaine du logiciel Appèl d'offre européen ITEA	Website ARTESI – Ile de France	French	6 December
Oproep ITEA	Onderzoek Nederland	Dutch	14 December
EUREKA project calls for information technology proposals	Cordis Focus	English / French / German / Italian / Spanish	17 December
Appèl à projets ITEA	La region numerique	French	17 December
Einreichung von Projektvorschlägen in EUREKA-ITEA	Website SFS (Software Forum Saar)	German	18 December
Aufruf zur Einreichung von IT-Vorschlägen	Forschung International	German	19 December
ITEA: 5th Call for Proposals open van 15 januari tot en met 12 april	Website Senter International	Dutch	21 January 2002
Vijfde ITEA oproep voor projectvoorstellen	Monitor	Dutch	March 2002

National websites and publications of the Public Authorities

Article	Publication	Language	Date
Il Programma Eureka ITEA ha lanciato il quinto bando per proposte progettuali	MIUR Website	Italian	30 November
Vijfde ITEA oproep voor projectvoorstellen	IWT Website	Dutch	December
ITEA Overzicht oproepen	IWT Website	Dutch	December
Fifth ITEA call for Project Outlines	DLR Website	English	December
Le cinquième appèl à propositions ITEA ITEA 5th call for proposals announcement	Website Ministère de l'Economie, des Finances et de l'Industrie	French English	December
Vijfde ITEA oproep voor projectvoorstellen	CIC-Online	Dutch	6 December
Vijfde ITEA oproep voor projectvoorstellen	E-zine CIC	Dutch	7 December
Lancement du 5ième appèl a projet d'ITEA	Website Ministère de L'Economie, des Finances et de L'Industrie	French	16 January 2002

Table 8 Overview of articles and quotes in the general and technical press and in publications of other third parties, in the period July 2001 - December 2001 (print and electronic).

Appendix A: Who's Who at ITEA

A.1 The ITEA Board

Company	Name	E-mail	Phone number	Fax number
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ITEA	Eric Daclin (vice-chair-man)	Daclin@itea-office.org	+31 40 247 5590	+31 40 247 5595
ITEA	Kees van Mourik (as of Jan 1, 2002)	Vmourik@itea-office	+31 40 247 5590	+31 40 247 5595

A.2 The ITEA Board Support Group

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A.3 The ITEA Steering Group

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A.4   The ITEA Office

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NETCARE	Indra	Amada Bernal-dez	Abernaldez@indra.es	+34 91 480 95 27	+34 91 480 95 56
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POLLENS	Alcatel	Carlo Drago *(as of Feb 1, 2002)*	Carlo.Drago@alcatel.fr	+33 1 6963 1091	
PROMPT 2 IMPLE-MENTATION	Esterel Tech-nologies	Bernard Dion	bernard.Dion@esterel-technologies.com	+33 4 92 02 40 40	+33 4 92 02 40 64

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A.6 Public Authorities

A.6.1 LIST OF MEMBERS OF THE ITEA DIRECTORS COMMITTEE

Country	Name	Department	Function	Postal address	E-mail	Phone	Fax
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Appendix B: Participation of ITEA projects in major external events

B.1 Call 1

ATHOS

7th International Conference on Intelligence in Next-Generation Networks (ICIN 2001), Oct 2001	Moorea, a Service Execution Environment for Telecommunication Application	Bordeaux, France
Softswitches and Signalling for Next-Generation Networks, June 2001	Presentation of ATHOS approach and services	London, UK

DESS

Specification, Implementation and Validation of Object-oriented Embedded Systems (SIVOES'2001), June 2001	"An application of the DESS modelling approach: The Car Speed Regulator"; "A classification of real-time specifications complexity"	Budapest, Hungary
Joint 8th European Software Engineering Conference (ESEC) and 9th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE), Sept 2001	"Combining UML and formal notations for modelling real-time systems"	Vienna, Austria
Second International Workshop on Technologies for E-Services (TES 2001), Sept 2001	"PSI - Pervasive Service Infrastructure"	Rome, Italy

PEPITA

ObjectWeb Conference, Oct 2001	Presentation of five demonstrations based on the PEPiTA EJB platform	Paris, France
JavaDays Conference, Nov 2001	Presentation and demonstration of the PEPiTA EJB platform	Paris, France
TOOLS Eastern Europe 2001 Conference, March 2002	"Automatic composition of systems from components with anonymous dependencies specified by semantic-unaware properties"	Sofia, Bulgaria

UMSDL

CONCUR, Aug 2001	"Real-time Systems and the UML"	Aalborg, Denmark

VHE MIDDLEWARE

Advanced Topic Workshop Middleware for Mobile Computing, Nov 2001	"Mobility Support in Middleware for Virtual Home Environments"	Heidelberg, Germany

B.2 Call 2

@TERMINALS

E-service Engineering workshop, Sept 2001	Presentation of the project	Bilbao, Spain

NETCARE

Telemedicine Congress, Sept 2001	Presentation of the project	Vannes, France

SOPHOCLES

PDP 2001, Feb 2001	"Visual data-parallel programming for signal processing applications»	Mantova, Italy
HCI International 2001, Aug 2001	"A visual development environment for meta-computing applications»	New Orleans, USA
Parallel Computing 2001, Sept 2001	"Assembling dynamic components for metacomputing using CORBA»	Naples, Italy
PaCT 2001, Sept 2001	"Compilation principle of a specification language dedicated to signal processing»	Novosibirsk, Russia

VIVIAN

14th International Conference on Software & Systems Engineering and their Applications, Dec 2001	"Mapping Requirements to Architecture: an Experience Report from the VIVIAN Project"	Paris, France
3rd International Conference on Information Reuse and Integration, Nov 2001	"Architecting Mobile Collaboration at the Middleware Level"	Las Vegas, Nevada, USA

B.3 Call 3

AMBIENCE

ICT Congress, Sept 2001	Photobrowsing prototype demonstration	The Hague, The Netherlands
Interactive Home Seminar, Dec 2001	Context sensor modules demonstration	Oulu, Finland

CAFE

Fourth International Workshop on Product Family Engineering (PFE-4), Oct 2001	Several papers presented by the CAFE partners	Bilbao, Spain
5th IEEE Int'l Symp. on Requirements Engineering, August 2001	"Consistency Management of Product Line Requirements"	Toronto, Canada
OOPSLA Workshop on Domain-Specific Visual Languages , October 2001	"Modelling Languages for Product Families: A Method Engineering Approach"	Tampa Bay, Florida, USA
ESM'2001 European Simulation Multi-conference	"Challenges for simulation of systems in software performance engineering"	Prague, Czech Republic

DIGITAL CINEMA

International Theatre Equipment Association Annual convention, Aug 2001	"An overview of the digital cinema future"	Bad Kreuznach Germany
ICIP (International Conference on Image Processing), Oct 2001	"A watermarking scheme for digital cinema"	Thessaloniki, Greece
Kinepolis, October 2001	Project demonstration for Digital Advertising	Brussels, Belgium
Oct 2001	AGE Inter-operability demonstration of EVS with main MPEG-2 US competitors , such as Grass Valley Group and AVICA	Los Angeles, USA

EAST-EEA

EUCAR EG-C Meeting, 17 October 2001	Presentation of project goals and concepts	Brussels, Belgium
Advanced Driver Assistance Systems in Europe (ADASE) concertation meeting, 25 October 2001	Presentation of project goals and concepts	Brussels, Belgium
EUCAR Conference, Nov 2001	Presentation of a project poster	Brussels, Belgium

HOMENET2RUN

International Symposium on Powerline-Communications and Its Applications (ISPLC), April 2001	"Power-Line Communications Overview"	Lund, Sweden
IIR's 3rd European Congress on Home Networks, April 2001	Presentation of the project	London, UK
HiperLAN 2 Global Forum, Sept 2001	Presentation of the project	Eindhoven, the Netherlands
Net-at-Home Congress, Nov 2001	Presentation and demonstration on HiperLAN 2 with introduction to HOMENET2RUN	Nice, France

POLLENS

IEEE GlobeCom 2001, Nov 2001	"Admission Control over Assured Forwarding PHBs: a way to provide Service Accuracy in a DiffServ Network"	San Antonio, Texas, USA
IWDC 2001 (Evolutionary Trends of the Internet), Sept 2001	"End point Admission Control over Assured Forwarding PHBs and its performance over RED implementations"	Taormina, Italy

Appendix C. Project Fact sheets

C.1 Call 1

ATHOS (ITEA 99001)

Advanced platforms and Technologies for the Offer of communication Services

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Goal

To define and develop an advanced architecture based on middleware platforms and technologies (MA, Java, COR-BA), in order:

- to build up an appropriate set of service components exploiting the available APIs and platform core functionality;

- to identify a system architecture capable of supporting integrated communication and Internet value added services in a flexible way;

- to manage the quality of such services (QoS) as provided by the system and perceived by end users, in line with the Service Level Agreements (SLAs)

Overview

Deregulation and liberalisation are rapidly changing the working environment for network operators and service providers. In this environment, a rapid introduction of added-value services and a high degree of customisation are crucial to the service creation strategy. Success, which depends on customer satisfaction, will require service quality assurance, based on a SLA/QoS management accompanied by automated reactive and pro-active repair of the system. On the other hand, the support of advanced IP and Internet services is becoming an issue for the success of both Internet Service Providers (ISPs) and Public Network Operators (PNOs). This kind of convergence between IP and telecommunication worlds could represent an interesting opportunity for network suppliers and service providers as it could deliver the advantages of both approaches.

Details

The aim of the ATHOS project is to investigate, develop and validate an advanced distributed computational environment as a basis for easy deployment of basic and advanced communication services, in a fast provisioning perspective. In fact, in the modern communication scenario the important issues will be the fast provisioning of services, the possibility to offer lots of commodities (personalization with services tailor-made, Internet mobility of Web customers, direct manageability of own services, media integration and flexibility), and the ability to ensure service quality and availability.

For these reasons a platform for supporting Internet, IP and telecom services in a cooperative approach has to mediate between different infrastructures that provide TLC and IP services, respectively. Communication at the service level between servers and the existing Internet and IN infrastructures must be based on opening up existing systems.

In such a context (integration of Internet links and provisioning a mix of multimedia services), providing end-to-end service quality assurance is a major requirement which implies the delivery of adequate management functions and of significant SLA conformance evaluation data to the end customer.

Besides, the availability of standard APIs is the key to the construction of a layered middleware platform (for third party applications) and easy-to-use service management is a hot topic as it can optimise the cost/performance ratio. These goals will be achieved by working on the following aspects:

- Network architectures: to obtain a "unified" communication framework for the services

- Services architectures: to obtain a "unified" Service Execution, Creation and Management Environment framework

- Management architecture: to obtain a "unified" QoS/SLA framework for infrastructure and services

The project will cover the analysis, definition and evolution of the platform in three phases: in the first we analyse the external requirements; in the second we define the characteristics (specifications) to satisfy the requirements; in the third we develop the components of the platform in order to validate the specifications (trial).

The project results will be in the form of APIs and experimental software components, yet will not be ready to go on the market. Most of the partners plan to incorporate ATHOS concepts, methodologies and, above all, re-engineered software components in future releases of their current products. The project will also provide APIs in order to allow third-party access to a set of ATHOS platform functionality as well as the re-utilisation of middleware components in different scenarios.

Last but not least, project results will be made public through publications in international journals (e.g. JSNM, IEEE, etc.), conference papers, and through participation in international exhibitions and contributions to standardisation bodies.

Partners

- Italtel (I)   - ILOG (F)

- Evidian (F)   - France Telecom R&D (F)

- Bull/Dyade (F)   - INPG/SIRAC (F)

Contact

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Status

Currently, the implementation of the network nodes of the platform , the integration between Communication level and the distributed Platform Environment level, the integration of the ATHOS Service Model and the other level with the QoS/SLA aspects are all ongoing.

Project start: 3/2000   Project end: 8/2002

Results

Currently 3 deliverables (of the total of 8) are ready and the fourth is in progress. The deliverables provide the Market Analysis from both the client and operator perspective. They also provide the descriptions/requirements of the kind of services that can be developed on the ATHOS platform and the description of the chosen services for the final trial and provide the description/requirement/specification of the Overall Architecture for ATHOS framework.

In progress is the specification of the APIs on the top of the platform and development of the integration between the communication level of the Architecture (stacks) and the advanced DPE (with Mobile Agent features). In addition to we are working on the specification of the integration of the QoS/SLA aspects both for the Network and Service Level.

From a technical point of view, we have already achieved integration between the Stacks (communication level) and one of the two chosen DPEs with Mobile Agent features. We decided to carry out a test with two different platforms, both with mobility, one weak and the other strong, in order to understand what works best for the chosen application.

We are also implementing that part of the Service Model specified in deliverable 3 and deliverable 4 on top of the platform. In that sense we are using the specified APIs.
We are also starting to add the QoS/SLA APIs towards the QoS/SLA server (both for Service Management and network management). A first version of this server has been developed and is now available for integration into ATHOS and for experiments.

BEYOND (ITEA 99002)
Beyond the GUI

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Goal
To explore natural forms of interaction between people and the products and services they use. BEYOND supports European industry with modern concepts and tools with which to create ergonomic user interfaces. These will enable natural access to the increasingly complex computer applications.

Overview
A lot of work has to be done to overcome the apparent gap between complex computer technology and the need for easy and ergonomic use. Human machine interaction must be made more natural in order to build better products and enable a larger number of people to use them with ease.

Details
BEYOND will improve the capability of European IT industry in user-centred design methods, tools, and techniques The main focus of this project lies on multi-modality - supporting a variety of ways of inputting and outputting informa-tion - and adaptivity of user interfaces - the ability to adapt an interface to an individual user.
BEYOND will investigate different forms of multi-modal user interfaces that support a richer set of sensors and emit-ters for interaction. Another goal is to enable a system to know about its context and current user, in order to enable efficient and effective user interaction (i.e. the system adapts to the user and not vice-versa).

In order to enable European industry to use the new concepts, simulation and prototyping methods are being devel-oped.
In summary, topics and tasks within the BEYOND project will be:

- UI simulation environments for product design

- UI development platforms and usability engineering guidelines

- Evaluation of next generation UI hardware and new UI concepts

- Components that support the development of adaptable and multi-modal UIs

The results will be disseminated at public workshops (see contact below) and via the BEYOND Web site.

Partners

- BARCO (B)	- Delft University of Technology (NL)
- Philips (NL, B, A)	- Cath. University of Leuven (KUL) (B)
- CCC/Cybelius (FIN)	- Limburg University Centre (LUC) (B)
- Eyetronics (B)	- VTT Electronics (FIN)
- LB Data (A)	

Contact
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Status
Finished

Project start: 09/1999   Project end: 09/2001

Results

- Key factors in UI and context of use (internal document)

- Requirements and Usability Methodology (internal document)

- A Common reference model for adaptive user interfaces (internal document)

- 19 June 2000: First ITEA BEYOND seminar, Oulu Finland (public)

- Improvement of mono-modal enabling technologies (internal document)

- Guidelines for 3D representations (internal document)

- CHI 2000 - Human factors in computing systems (conference)

- Software Architecture for functional modelling of UI (internal document)

- Functional specification and Architecture (internal document)

- Refining & Extensions on reference model for adaptivity (internal document)

- Many publications in Journals & Papers at Conferences from documents above

- 20 November 2001: Second ITEA BEYOND seminar, Kuurne, Belgium (public)

BRIC (ITEA 99003)
Broadcast & Internet Convergence

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Goal

To develop know-how and technology that will enable European industries to offer up-front competitive solutions for the new growing field of multimedia content delivery, either via broadcasting or, through various forms of networking.

Overview

The Internet has rapidly become a major mass medium. Its growth has triggered the convergence of content and support with other traditional media commonly used in broadcasting and consumer industries. Internet services are going to be supplied with traditional broadcast services, while broadcast services will be offered over the Internet.

For either Internet services via digital broadcasting, or broadcast services via Internet, to be successful, the development of new media delivery solutions must be based on an integral end-to-end approach. This project is therefore focusing on end-to-end system definition.

In this context "Content Protection" is becoming a key issue. The project is considering this aspect. Solutions will be experimented with. They are expected to have a profound impact on the end-to-end system and end-user terminal architectures.

Details

Accordingly, the project is organised in three work packages:

1. Delivery of Internet content over Digital TV Broadcasting, to include architecture study and validation of IP embedding in MPEG-2 Transport Stream, bandwidth optimisation techniques, and support of interactive applications.

2. Delivery of broadcast and multimedia content over Internet based networks, to include a protocol for the transport of MPEG-2 TS over IP-based networks, study of QoS constraints, and end user terminal architecture.

3. Security and Content Protection, to include definition of a generic model, prototyping and validation in the context of IP-based network applications.

Partners

- Italtel
- RAI
- THALES Communications
- Westcast Systems

- Nextream
- ENST (Ecole Nationale Supérieure des Télécommunications)
- TI Lab

Contact

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Status

Work related to IP over MPEG-DVB broadcasting almost complete. Modules for transport of rich content over Internet and for security and content protection ready. Integration tasks started. Final common demonstration planned to take place early July 2002. Good progress on QoS analysis.

Project start: Oct. 1999   Project end: June 2002

Results

IP over MPEG: Efficient implementation of Internet access functionalities on Return Channel adapter; demonstration made to ITEA-France meeting in Dec. 2001 - Efficient opportunistic data insertion system for satellite broadcasting.

MPEG over IP: Final demonstrator architecture definition - Integration plan.

Copy Protection: Contribution to DVB-CPT with Security architecture proposal.

Co-VAR (ITEA 99019)

Cooperative software design architecture based on augmented virtual objects

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Goal

The Co-VAR project targets the domain of Complex Systems Engineering through the conceptualisation of a Cooperative VAR (Co-VAR) architecture which will be used by platform developers.

Overview

The developers are constructing the VAR-development platform so that VAR-application developers in group can produce VAR-applications in cooperation with content providers and application exploiters. The Co-VAR 'users' are thus software designers who need to work in group in order to meet the application constraints of their clients (the 'end users' of the VAR-applications). Working in group means complex communications and coordination: the Co-VAR architecture aims to support this complexity through flexible and informal work flow procedures, centred around a repository of indexed and decomposable VAR objects. The communication processes will be related to the exchange of relevant information about such complex VAR-object statutes and related processes. The coordination processes will deal with the management of design tasks in terms of who will design which component for what deadline.

Details

The Co-VAR consortium are designing the Co-VAR architecture through 10 work packages. All partners represent the role of one or more (Co)-VAR actors. This guarantees that the Co-VAR architecture will reflect the conceptualisations of all future users and that a firm basis is provided for a cooperative VAR design standard. There are 5 technical work packages (Wp2, 3,4,5,6) that are related to Wp1. These 5 technical tasks can run in parallel since they are related to different aspects of the same conceptual architecture. In order to guarantee smooth integration and conceptual convergence, Wp7 is dealing with issues that provide a flexible merging of the results of the technical work packages. At the same time, Wp7 will support and prepare 'next step' functionality such as field evaluation of the designed concepts (Wp8) and also the necessary dissemination aspects (Wp9). The global project management is provided by a separate work package Wp10.

- WP1: Modelling the User Needs and Requirements

- WP2: Cooperation for content design

- WP3: Indexed VAR database

- WP4: Object interaction dependent simulations

- WP5: Multi-platform support for translation engines

- WP6: Multi-dimensional adaptive interface

- WP7: Merging the conceptual modules

- WP8: Field evaluation

- WP9: Dissemination

- WP10: Project Management

Partners

- Vartec
- BARCO NV Projection Systems (B)
- BIKIT VZW (B)
- CALIBRE BV (NL)

- AISoftw@re (Italy)
- MERLIN (UK)
- NV Sealife Center Belgium (B)
- STRASS (FR)

Contact

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Status

All workpackages are started. Deliverable D1, D2a, D3a and D4a have been submitted.

Project start: 1/6/2000   Project end: 31/10/2002

Results

In WP2, a full and systematic overview was made on how existing visualisation products can support the use case. Also, an overview of current interaction mechanism between large screens and end-users (cr. Use case) was made.
In WP3, a study was finalized on the topic of the content-based indexing for images, audio, video, and 3D objects. In WP4, an implementation concept has been worked out on how to visualize 3D object interactions. This achievement allows to analyse not only the geometric hierarchies of 3D objects but also the dynamic aspects of 3D objects which are object actions.
In WP5, a study was made of the programming languages that can be used in the object translation engine, so as to provide platform-independent scripting capabilities.
In WP6, a case study has been elaborated to implement a haptic 3D interface as a first stage of the use case proposed in WP2.
In WP7, a study has been made on fast tuning of multi projector systems. This has aided in optimising of the "auto-imaging" (auto-alignment product for CRT-multi-channel projection systems) for typical V&AR solutions (cfr. Use case).
In WP8, a functional access to mail entities has been tested using the Outlook object model. This way a progress has been made towards a mail agent to be used in CO-VAR field evaluation support in WP8.

DESS (ITEA 99012)
Software Development Process for Real time Embedded Software Systems

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Goal

To develop a sound methodology that will enable the European software industry to provide better support to the development of embedded real time software.

Overview

From refrigerators to cars, ever-greater numbers of consumer goods are being computerised to provide additional benefits to users. In, for example, cars, mobile phones and TV sets, this increased functionality increases the complexity of the product. The software that powers these features is embedded and has to react in real time to external events. This type of software is particularly difficult to develop. The methodology that is being developed in the ITEA DESS project will help to engineer high-quality software at reasonable costs within the deadlines that have been set.

Details

The methodology will adapt modern object-oriented and component-based software development processes to the specific needs of the application. Based on this methodology, existing software tools and libraries will be provided that are tailored to the needs of DESS. Several demonstrators will show the applicability of the method within several application areas.

Preceding the definition of the DESS methodology, application-specific requirements are captured.

Once the methodology is defined, supporting methods and tools are characterised in detail, resulting in a complete process support environment for the DESS methodology. This includes:

- UML with real time extensions

- Extended development tools

- Templates and guidelines

Partners

- Barco (B)
- Bull (I)
- DaimlerChrysler (D)
- France Télécom (F)
- Philips (NL)
- Siemens (D)
- Thomson (F)
- Simulog (F)
- TXT (I)

- UNIS (CZ)
- CEFRIEL (I)
- GMD FIRST (D)
- INRIA (F)
- Katholieke Universiteit Leuven (B)
- TU Eindhoven (NL)
- University of Paderborn (D)
- University of Magdeburg (D)

Contact

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Status

The DESS Project has reached its end and has passed the ITEA review successfully. The definition of the DESS methodology document and the methodology has been finalized.

The detailed and consolidated specifications for tool extensions are finished. The DESS process models and process development guidelines have been drawn up. Extensive dissemination has taken place and the Public website has been updated.

Project start: 10/1999   Project end: 12/2001

Results

All internal and external deliverables have been completed and have been disseminated on the internal DESS web-site.

Public deliverables and results have been issued for dissemination on the public website (http://www.dess-itea.org).

The DESS Methodology has been finalized and the overall DESS Methodology document has been drawn up.

EUROPA (ITEA 99004)
End-user Resident Open Platform Architecture

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Goal

To define a set-top box reference architecture, with enhanced functionality, capable of delivering next generation services on the digital video broadcasting multimedia home platform (DVB-MHP).

Overview

European television systems are converging on digital standards. In parallel with the evolving personal computer market, the TV set will bring the Internet and other services to the general population. Within the EUROPA project, a conceptual foundation is being laid for next-generation set-top boxes that will take the possibility of accessing interactive services from a TV set to new dimensions. This includes the adoption of new standards, such as MPEG-4, MPEG-21, cryptography for secure on-line banking and online shopping, as well as agent technology for advanced user interfaces.

Details

The anticipated outcomes of the project are:

 - definition of an open architecture for a new generation of set-top boxes;

 - exploitation of the functionality extensions to allow for the application of secure transactions, advanced content and attractive user interfaces;

 - a set of validated supporting methods for the implementation of these new services on the set-top box reference architecture.

Up to now, the European market for DVB has been fragmented. Several proprietary platforms have been developed (such as Media Highway from Canal+ in France or PremiereWorld's d-box in Germany). There remains, nevertheless, a need for an open standard. Additionally, the existing hardware architecture is unable to support the full spectrum of upcoming applications for set-top boxes, intelligent resources and quality of service needed to become part of the open standard.

The EUROPA project will not develop set-top box hardware, but an open, platform independent, reference architecture to support next-generation services, such as:

 - interactive TV with personalised, adaptive and attractive user interfaces;

 - secure online shopping and online banking;

 - support for complex digital streaming multimedia content.

Another key aspect of the project is the provision of supporting methods and examples of software modules to European industry, for the implementation of the reference architecture. This includes flexible methodologies for the mapping of the software modules onto hardware modules.

The results of the project will be validated in demonstrators and the results as well as the resulting reference architecture will be made publicly available.

The project team works closely with standardisation bodies, such as MPEG and DVB and is expected to lay the foundation for a joint European set-top box architecture. This will also strengthen the position of European IT industry with respect to competitive US standards and products.

Partners

 - SchlumbergerSema (F)
 - Italtel spa (I)
 - Philips (NL, F)
 - CSELT (I)

 - IMEC (B)
 - Thomson Multimedia (F)
 - Katholieke Universiteit Leuven (B)

Contact

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Status

At about two-thirds of its lifetime the project has designed and partly implemented the EUROPA architecture based on the requirements analysis driven specification developed in the begin of the project. Most of the current activities are being carried out in the context of the second work package, the Development of supporting methods and implementations. The final part of the project, the Platform validation and assessment, has been completely defined and planned and is currently in a set-up status with respect to the demonstrators and the demonstration infrastructure. For this purpose the detailed demonstrator application scenario has been further developed in detail. This activity has resulted in the detailed specification of the required assets and applications to create the demonstrator. Next to this application related part the activity also resulted in initial requirements for the demonstrator set-up and infrastructure. The integration will be done on a common selected platform that is based on a set-top box prototype.

Project start: 10/1999   Project end: 03/2002

Results

The project completed its first major deliverable in September 2000. This contains five components: a description of the reference architecture, the required modifications and additions to the reference architecture, and three parts on the functionality extensions in the areas of support for electronic commerce, advanced content and advanced user interfaces. This deliverable serves as the basis for the implementation activities. A new deliverable detailing the implementation and describing the demonstrator scenario has been completed as well.

PEPiTA (ITEA 99007)

Platform for Enhanced Provisioning of Terminal-independent Applications

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Goal

The goal of the project is to create a Java-based leader implementation role for the European industry in the domain of middleware, for a terminal independent service platform, based on the Enterprise Java Beans server, supporting advanced telecom and secure Internet value-added services.

Overview

The aim of the consortium is to define common middleware services based on state-of-the-art software technologies and common software components supporting the requirements of telecom and Internet-based value added services (security, transaction, user profile management, middleware for electronic commerce, information retrieval and exchange, security and service remote management,...). A corresponding software platform is being developed with a set of validation prototypes demonstrating access from Java-enabled terminals through IP-based networks.

Details

The work breakdown structure is:

- Functionality requirements & design

- Virtual services APIs

- Common middleware services

- Enterprise Java Beans platform adaptations - Open Source

- Universal access to services

- Smart card services

Validating the project results' feasibility with demonstrator using auction sales services, portfolio management service, multi-standard mobile terminal with smart card subsystem.

Partners

- Alcatel Bell (B)	- France Telecom R&D (F)
- Alcatel CIT (F)	- Katholieke Universiteit Leuven (B)
- Bantry Technologies (IRL)	- Université de Grenoble (F)
- Bull CP8 SchlumbergerSema (F)	- Université de Valenciennes (F)
- EVIDIAN, A Groupe Bull Company (F)	- Charles University (CZ)

Contact

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Status

The project ended 31 December 2001. The full list of deliverables is available.
The final project review was held successfully on 21 February 2002. Three demonstrators were presented.

Project start: 01-09-99   Project end: 31-12-01

Results

PEPiTA partners have an active participation in 3GPP, IETF and JavaCard Forum organisations for normalization. Dissemination of results is achieved by research papers, participation to conferences and symposiums on Java and Open Source. The JOnAS EJB middleware with extended services is indeed available as an Open Source (15000 hits per day on ObjectWeb.org, 50000 downloads so far).

PEPiTA results are exploited in derived products by every industrial partner, and in dedicated courses and research labs by academic partners.

RTIPA (ITEA 99011)
Real Time Internet Platform Architectures

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Goal
The goal of the project is to create a leadership role for the European industry in the domain of solutions for the market of networked distribution of speech, video, and data and pave the way for the enhancement of Europe's communication infrastructure, such as the implementation of the next generation Internet Protocol including IPV6, security, QoS, multi-cast, mobility and policy management

Overview
The linking of networks for speech, video, and data is an ongoing trend. The deployment of streaming media (e.g. voice or video) is growing faster than the Internet itself. Both providers and clients rely on an appropriate quality of service for these new applications, but this cannot be accomplished with the existing Internet architecture.

Details
The goals of the project are to develop a novel Internet protocol network architecture to cope with the requirements of real-time streaming of multimedia data. Existing products and standards will be an integral part of this architecture. RTIPA's validation will ensure applicability and feasibility of the proposed solutions. The demands for real time Internet services will be met by the RTIPA project's homogenous platform architecture.
Tasks of RTIPA are to:

 - Identify the requirements expressed by customers and providers

 - Analyse products available on the market and appropriate international standards

 - Define a novel IP Network architecture

 - Specify and propose missing standards or standards evolutions

 - Develop middleware to demonstrate feasibility and accuracy of proposed solutions

 - Create a European platform that integrates most of the technological elements that should be part of the future IP Networks.

Partners

 - Philips (F, NL)
 - Thomson-CSF (F)
 - Siemens ICN SpA. (I)
 - France Telecom (F)
 - EolrinG (F)

 - Stichting Mathematisch Centrum(NL)
 - Oratrix (NL)
 - INRIA (F)
 - LIP6 (F)
 - Politechnico di Milano (I)

Contact
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Status
Project start: 10/1999   Project end: 12/ 2001

Results

The MLDv2 proposal will probably be accepted by the IETF.

The SMIL 2.0 will probably be accepted by the IETF.

Worldwide implementations SMIL 2.0 already available.

The Dual-Stack Transition Mechanism will become an IETF Proposed Standard in a few months.

The phantom circuit protocol for Call admission is implemented in the test for IP telephony.

TASSC (ITEA 99022)
Transaction value Added Services with Smart Cards

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Goal

The goal of the project is to design an architecture and to develop software components of a Card Management System (CMS) to be used in a distributed environment, based on standards, enabling multi application Smart Cards to be easily integrated into large networked systems.

Overview

New generation Smart Cards allows multiple application to be downloaded, offering access to multiple services with a unique card. Such cards may be used inside different kinds of terminals such as mobile phones, payment terminals, TV set-top-boxes.

Sharing space on these cards demands management of resources, both on the Card itself (in what is still limited space) but also on servers (owned by different actors - service provider, card issuers) with their private assets (id: customer profile databases) and the required security and confidentiality data access.

From these requirements, the TASSC platform architecture has been designed to hide such complexity through a middleware based on Sun Microsystem's J2EE platform.

Details

The breakdown of the work is as follows:

- Market relevance and market analysis

This survey analyses the user requirements for multi-application services on the base of an evaluation of market trends.

- Card Management System architecture specifications

Definition of system characteristics and services to provide an overall architecture for Smart Cards based on Sun J2EE multi-tier architecture.·

- Smart Card & Terminal software engineering

This is the implementation of the functional specification of the card and end-user terminal software management applet, communication between card and terminal).·

- Back-office software engineering

It consists in server components (servlets) development: in charge of the interaction between servers, exchange of messages between actors server databases, connection with SMS-C gateway, all developed in Java.·

- Methodology and tools

Several tools have been designed (feasibility, development, demonstration) for each step of the Smart Cards applet life cycle: log behaviour analyser, performance simulator, applet verifier static analyser, applet debuggers·

- Security engineering

In a product perspective, detailed guidelines are compiled to highlight Security critical architecture points, in 3 domains (banking, Pay TV, mobile), to help the development of real platforms early compliant with the Common Criteria requirements.·

- TASSC platform has been validated with two demonstrations and validation tools:

- a distributed Card Management System based on GSM using SMS supervision.

- a Multi services deployment of loyalty application in a 3G environment, PDA and Pay TV.

Partners

- Banksys(B)
- Ecole Nationale Supérieure des Télécommunications (F)
- Trusted Logic(F)
- Bull CP8 (F)
- Oberthur Card Systems SAS (F)

- TIM (I)
- Dyade (F)
- Philips Digital Networks (NL)
- Telecom Italia Lab (I)

Contact

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Status

Project finished

Project start: 01/2000   Project end: 12/2001

Results

White Paper, Demonstrations, Draft IETF/RFC submitted. On going presentation Standard consortia: Card Manage-
ment Systems, GlobalPlatform, JavaCard Forum.
Reuse of the results in MEDEA+ projet Esp@ss.

UMsdL (ITEA 99016)
The Powerful Real Time UML

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Goal

The goal of UMsdL project is to boost UML notation into a powerful Real Time UML (an extension/specialisation dedicated to real time software) with SDL technologies and tool kernels in order to:

(Incorporate into UML, characteristics which will make it more valuable for real time software development (simulation, verification, automatic coding ...)

(Provide efficient support tools for use in the ITEA projects and in industry

(Save the investments on SDL that are still active in the Telecom, Avionics or Automotive sectors, particularly in Europe

Overview

Today, there are two main streams of Software Engineering methods and tools for real time systems:

(UML, an initiative from the OMG which has organised a common effort for the definition and standardisation of a general purpose object oriented notation.

(SDL, a language invented in the 80s to answer Telecom users' needs, providing advanced capabilities such as model simulation and automatic coding. SDL is standardised by the ITU.

UMsdL aims to achieve a convergence of the advantages of UML, a popular and promising notation, and SDL, a proven and instrumented technique with a sound basis, in order to offer a powerful Real Time UML notation. UMsdL will define, demonstrate and experiment the process, notations and tools appropriate for the development of complex, real time, distributed or embedded systems.

Details

UMsdL is split into five work packages:

1. Specification of the process

2. Requirements and general specification

3. Detailed specification, design and realisation of tools

4. Experimentation

5. Dissemination and standardisation

The process describes how UmsdL can be used to specify complex data models and real time applications (distributed or embedded). In particular, issues related to the use of UMsdL within typical engineering processes are being explored, with a specific emphasis on the UML-SDL mapping. Tools and new functionality to support this process will be implemented incrementally allowing for continuous evaluation by the user. The technology and its performance will be assessed in real size industrial projects in order to get feedback for possible enhancements. Dissemination is performed at three levels: internally to the end user, among ITEA community and on the standardisation level (OMG and ITU) thanks to the expertise, the industrial weight and the high credibility of the partners.

Partners
- Telelogic (FR)
- PARVIS (I) applying
- Poly Milano (I) applying

Contact
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Status
Concepts: completed
Tools: first prototype available
Experiments: not yet started (PARVIS/POLY applying)

Project start: 11-01-99   Project end: 10-31-02

Results
Submitted contribution at OMG to UML RFPs on Action semantics
First prototype tool support for UML combined with SDL

VHE Middleware (ITEA 99013)
Middleware for Virtual Home Environments

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Goal
The goal of this project is to make European industry the leader in middleware for end-user terminals with wireless connections and interconnections and corresponding infrastructure. This will be done by developing software technologies for new products that can piggyback on the fast-growing markets for cellular (i.e. GSM, UMTS, GPRS) voice/data communication products and services. The needs of mobile users and mobile services will be given special consideration.

Overview
The consortium aims to define the middleware software technologies for use in application server and in end-user terminals. It will establish Virtual Home Environments (VHE), which will allow users to use and customise their services wherever they are (home, office, car, etc.), and use them regardless of time or whether they are in a wireless or wired environment. A core component will be a generic connection service. This will enable users to contact back-office services in an ad hoc fashion, independent of the environment (wired or wireless), the access device (mobile phone, PDA, desktop, terminal) and the type of user (residential/business).

Details
The work breakdown structure is:

- System Requirements & Design

- VHE Middleware for Multi-standard terminals

- VHE Middleware for Smart Card Platform

- VHE Middleware for VHE User Interface

- Technology Integration, Validation Tests, Documentation

- Standardisation and Dissemination

In order to validate the project results, a range of demonstrators will be built. These will comprise a multi-standard mobile terminal (with GSM, GPRS, UMTS, DECT, Bluetooth, WLAN/HomeRF components and Smart Card), a set-top box (with Bluetooth and/or WLAN/HomeRF and/or DECT wireless interconnection module and PSTN / ISDN interface), and a smart card subsystem.

Partners

- Robert Bosch (D)	- Fujitsu-Siemens(D)
- Nokia (SF)	- Orga Kartensysteme (D)
- Philips (NL,B,D)	- VTT (SF)
- Siemens (D)	- Paderborn University (D)

Contact
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Status
Work on system requirements, design and the evaluation of available technologies has started.

Project start: 09/1999   Project end: 06/2002

Results

The technology survey has been finished and the requirements capture and the definition of validation scenarios is under development. A set of public and internal workshops have been planned to promote further activities.

C.2   Call 2

@Terminals (ITEA 99030)
Architecture and Tools to Deliver Adaptive Content and Application to Terminals

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Goal
The goal of the project is to develop new network terminals, such as mobile telephones, PDA-s, network computers, on-board multimedia platforms, and set-top boxes. These terminals have to be reliable, cheap, efficient in energy consumption, time-to-market, and flexible. Flexibility of terminals is revealed as the ease of development of new downloadable applications as downloadable applications enable new services on new and existing terminals. This way we can take advantage of the fast progress in available HW and SW components and set standards that will enable these terminals to access new services deployed on the various networks (private Intranets as well as the public Internet).

Overview
The aim of the project is twofold:

1. Define the concepts for building a new architecture for the provision of adaptive content and applications to a variety of terminals.

2. Develop the methodologies enabling rapid development of the terminals and services complying with this architecture.

Details
The work breakdown structure is as follows:

- A first work package is dedicated to the project management and all exploitation and dissemination activities, including standardisation.

- The goal of work package 2 is to define an architecture for providing adaptive content and applications to terminals.

- The goal of the work package 3 is to define a methodology for the rapid development of terminals and user services that could operate within the architecture defined.

- Work package 4 will be used to implement prototypes that will help in elaborating the concepts. Severall demonstrators (prototyped for the project) will demonstrate elements of the concepts of the @Terminals architecture. These demonstrators will enable project partners to validate most of the new concepts elaborated during the project and assess the potentiality for actual product development.

Partners

- Cefriel (I)
- TXT e-Solutions (I)
- CiaoLAB (I)
- Olivetti (I)
- Philips Fimi (I)

- Amena (E)
- ESI (E)
- Gedas (E)
- Philips (NL,B)

Contact

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Web site: www.esi.es/@Terminals

Status

Roughly two thirds of its lifetime, the first version of the architecture has been delivered. The improved second version is currently under discussion. Terminal, application and software guidelines and concepts have been defined and a first version of one of the demonstrators has been shown.

Project start: 01-10-00   Project end: 31-09-02

Results

Public: Needs and Requirements
Internal deliverables: First versions of the Architecture Specification and Design, SW Development handbook, Terminals and application engineering concepts and Specification of Trial and convincing applications.

NETCARE (ITEA 99033)

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Goal
The NETCARE objectives are to design and implement a secure infrastructure built on European Software Components and official or de facto standards, making use of up-to-date technologies (Internet, the Web, etc.) to support services which could be used by health care applications.

Overview
NETCARE will supply a modular, open, secure network infrastructure, which includes a range of software components inside a general framework, such as:

- Deployment & Exploitation Toolkit of software components which will constitute tools for any application running in the Application Server

- a middleware which will permit cooperative work and access in a secure and transparent way to the distributed services, through a customised, user-friendly graphical interface

- An enterprise-wide scheduling system, which will be used to manage the diaries of patients and resources and track the status of appointments throughout the health care organisation;

- A Generic Health Portal for access to project information, services and applications

- Security agents providing selective access to applications and medical data, based on user authentication and profile management

This platform will make available APIs for plugging in external applications. These will be published.

Details
The breakdown of the work is as follows:

Work package 1: Project Management

Work package 2: High Level Design and Component Specifications

Work package 3: Software Components developments

Work package 4: Trials

In order to verify that these technological software components and middleware are adequate to the needs of software applications editors, and to validate concepts and API's, some trials will be carried out in the health domain:

- one in a professional environment (care unit, laboratory)

- second related to citizens (Patients towards their own health data stored by health care professionals)

Partners
- INDRA Sistemas (E)
- GIE CONVERGENCE-PROFILS (FR)
- IMS (IRL)
- AKAZI Technologies (FR)
- MEDASYS (FR)
- ETIAM (FR)

Contact
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Status

Software components development are nearly finished and actually are in software integration phase; Trials definition is in place.

Project start: 01-07-00   Project end: 30-06-02

Results

A preliminary study of the state of the art in Internet developments and distributed architecture has been issued. The NETCARE architecture and high-level design and specification of components are in progress.

SOPHOCLES (ITEA 99038)

System level develOpment Platform based on HeterOgeneous models and Concurrent LanguagEs for System applications implementation

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Goal

In the next decade, "Software driven systems" will play a crucial role in Telecom (3rd/4th-generation mobile radio, both terminals and base stations,...) and Multimedia (set top box, multimedia computers, ...) applications. To succeed in implementing such applications, also taking into account time-to-market aspects, it will be necessary to use:

- high level programming environments, coupled to

- efficient heterogeneous cycle-accurate simulators, and

- global system modelling.

The aim of the SOPHOCLES project is to reach a conceptual validation of methodologies, platforms and technologies supporting the integration, validation and programming, over a distributed environment, of complex systems composed of heterogeneous Virtual Components.

Overview

This methodology should permit the birth of Cyber Enterprises devoted to provide, over the Web, the integration services. Main users of the methodology will be complex system architects, Virtual Component providers, Intellectual property designers and final system producers. This Cyber Enterprise methodology will greatly benefit during all the stages of integration, validation and programming, from advanced cognitive interfaces.

Cognitive interfaces could provide clever support to the activities of system architect. The environment could be integrated with multimedia user interface, permitting a multi sensorial contact with the characteristic of the system under assembly.

Details

The work breakdown structure is:

1. Cyber Enterprise Definition and Specifications

2. Refinement of concepts and techniques

3. Feasibility studies

4. Sophocles Concepts Validation

5. Exploitation and Dissemination of the Results

New heterogeneous formalisms such as SynchCharts Esterel, ArrayOL, Evolving Grammars, Made, SIMPLE will allow new concepts studies. For their evaluation, various languages and techniques will be used: Java, Jini, design patterns, Esterel with UML extensions, RMI, XML, Array-OL, ZZ, ...

Partners

- THALES Communications (F)
- Philips (NL)
- IPiTEC (I)
- THALES Underwater Systems (F)
- Esterel Technologies (F)
- ENEA (I)
- LIFL (F)

Contact

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Status

The global specifications of SOPHOCLES have been finished. The work on refinements on concepts is well underway, and the work on the feasibility studies and the development for demonstration are under process.

Project start :11-01-00   Project end :31-08-03

Results

The project completed its first deliverable on the global specifications in March 2002. It contains : the analysis of the user needs, the identification of techniques, the detail specifications on the Cyber Enterprise Web management and the virtual components simulation environments, and the project global specifications.

TESI (ITEA 99037)
Trusted European Security Infrastructure

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Goal

In order to protect Europe's critical infrastructures and businesses from increasing 'Cyberwar' and economic intelligence activities, the TESI project aims to provide an OPEN and TRUSTED security infrastructure. This will be completely source code controlled and use cross-exchangeable European security components.

Overview

The consortium is aiming to develop an Internet security middleware infrastructure, based on the OpenGroup CDSA specification with a wide collection of 'Trusted Security Services' components.
This trusted infrastructure will be:

- entirely under source code control developed by European companies

- compliant with IETF standards

- fully compatible with all de facto standard internet applications (Web, email, etc.)

The TESI infrastructure will be ported to the most popular operating systems.
TESI will thus enable users to choose freely which of the TESI security components (encryption, authentication, trust policy, signature, time stamping...) they need, and from which supplier(s) they obtain them from. Their choice of supplier is according to whom they trust, and is independent of any Internet software that they are already using.

Details

The work breakdown structure is:

1. TESI CDSA core middleware components

2. Internet client security components

3. Internet server security components

4. Trials and dissemination

To validate the project results, TESI enabled secure Web, email and virtual private networks (VPN) demonstrators will be built and tested by users from industry and the public sectors.

Partners

- Bull (F)
- Utimaco (B)
- Amtec (I)
- Bouygues Telecom (F)
- I2E (F)
- I&T (I)

- Q-Labs (F)
- Politecnico di Torino (I)
- Sistech (F)
- Simulog (F)
- Flextel (I)
- Ercom (F)

Contact

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Status

Beta versions of TESI CDSA core components are available.
Client and Server components are under development.

Project start: 02/2000   Project end: 12/2002

Results

TESI core components (Linux & NT). Security Services components (crypto, X509, time stamping,...). TESI ena-
bled secure applications (WEB, E-mail, VPN,....).

VIVIAN (ITEA 99040)

Opening Mobile Platforms for the Development of Component-Based Applications

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Goal

The project goal is to provide a middleware platform for mobile terminals (e.g. smart phones, PDAs, laptops) which will support the mobility aspect of these devices and facilitate the development of 3rd-party software components (applications and services).

Overview

Mobile communication, personal computing and distributed information services are merging at a rapid pace and existing commercial platforms for mobile devices need a substantial boost in order to meet the new market needs. To help in this direction, the VIVIAN project proposes a middleware platform for a variety of application domains accompanied by a developer's guide which together will ease the task of 3rd party developers of mobile applications and services. To achieve this objective, VIVIAN has to tackle software development problems at different levels ranging from the operating system (necessary for developing drivers for peripherals attached to the mobile terminal, e.g. smart card readers) to the middleware and the application levels. VIVIAN concentrates on Symbian OS and Linux-based mobile terminals and builds on CORBA experience in order to provide a mobility-enabled middleware platform founded on fully fledged component technology, extensible on request according to the application needs.

Details

The work in the VIVIAN project is organised in six work packages as follows:

1. VIVIAN specification (requirements elicitation & analysis and platform architecture)

2. Prototype implementation (based on wireless CORBA)

3. Design and development of domain specific platform components

4. Integration of platform components

5. Design and implementation of domain specific applications

6. Documentation and dissemination

The project results will support the easy development of applications and services for a wide range of mobile application domains including Customer Relation Management, Linguistic applications, Electronic Ticketing Systems, Geographic Information Systems, Collaborative work, indoor navigation, etc.

Partners

- ADISOFT (D)
- INRIA (F)
- NOKIA (FIN)
- PHILIPS (NL)
- CAS (D)
- INT (F)

- PALMWARE (F)
- UNICOM (FIN)
- HUT (FIN)
- MEMODATA (F)
- PARAVANT (FIN)

Contact

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Status

On July 12, 2001 the 1st ITEA review of the VIVIAN project took place in Helsinki. By that time the platform requirements elicitation and analysis were accomplished and the architecture specification had started. The implementation design of the prototype was also underway.

Start Date: June 2000   End Date: August 2002

Results

The project has produced the requirements document containing the results of the requirements elicitation and analysis phase of the VIVIAN platform. The first draft of the architecture document is on its way as well as the implementation design of the VIVIAN prototype. Also, a range of proof of concept software has been developed to provide feedback about the application expectations from the middleware platform.

C.3 Call 3

ADANETS (ITEA 01001)
ADAptive NETworks and Services

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Goal

The goal of ADANETS project is to investigate the scope of problems related to the mobility in applications and in network services. A particular attention will be paid to the adaptiveness, i.e. the capability of networks and services to provide mobility features. Specifically, ADANETS will elaborate a generic service/network model with adaptive properties enabling the provisioning of mobile services and end-user applications, with the guarantees of the required Quality of Service (QoS) levels and according to Service Level Agreements (SLA).

Overview

ADANETS will address the issues of efficient network utilization, increased manageability and service agility in the context of personal/device mobility and session portability. The project will develop a framework of a Unified Profile, which will be used by the content providers to better target their clients, and by the network service providers to apply the appropriate service management policies with respect to QoS requirements. A generic Service Model will be built as a gluing solution to the QoS and the profile management problems in the context of mobility. A specification of a set of open Application Programming Interfaces (API) will facilitate the development of applications and network services in a ubiquitous computing environment. A demonstrator will be developed which illustrates essential elements in adaptive and mobile area, servicing a user or group of users. It will involve home, car, and personal environments. A case will be shown where a user can access services from different sites, with consumer device platforms differing in their properties, yet maintaining a consistent user interaction model. Likewise, the ADANETS project intends to secure the competitive power of the European industry in terms of facilitating the way to conceive and deliver innovative network services and user terminals/appliances.

Details

The work breakdown structure is:

Work package 1: Mobility in Applications and Network Services

The role of this Work Package is to investigate the scope of problems related to the mobility aspects in end-user applications and network services. In particular, the solutions elaborated in the WP1 will illustrate the session portability of services and a framework for intelligent agent interactions in both home and mobile environments. Furthermore, the WP1 will generate a high-level (i.e. end-user application related) QoS requirements as an input to the Work Package 2, and it will provide a high-level profile requirements as an input to the Work Package 4.

Work package 2: QoS Management

This Work Package will elaborate an efficient QoS framework satisfying the parameters derived from the WP1 requirements concerning the end-user mobile applications. This framework will cover a number of QoS management issues such as algorithms and methodology for constrained routing, network performance analysis, inter-domain QoS/SLS negotiation, automated QoS provisioning (translation of service level specifications into the network configuration), policy-based management, pro-active management/assurance and others. The WP2 will produce requirements on the QoS related aspects of the unified profile. This will be another input to the Work Package 4 activities.

Work package 3: Service Development Environments

This Work Package will produce a generic service/network model, which will play a centralizing role for the remaining three work packages. Each of them will use an appropriated interface (API) in order to instantiate and to manipulate these generic models in the service definition, provisioning, activation, and operation phases.

Work package 4: Unified Profiling, Concept hierarchies, and Distributed DB Management

This Work Package is devoted to the elaboration of a Unified Profile that includes the end-user profile attributes as well as network level QoS provisioning attributes. The focus will also be on the elaboration of concept hierarchies (ontologies) that enable understanding different vocabularies. A real-time distributed database will be used. Furthermore, the relation between the unified profile model and the supporting policy-based management mechanisms will be investigated.

Work package 5: Project Management and Dissemination of Results

This Work Package is devoted to the organisational/administrative issues, the liaison activities and the dissemination of the ADANETS results in the standardization bodies and forums, and participation to conferences.

Partners

- Alcatel CIT Research & Innovation (F)
- Philips Digital System Lab (NL)
- Fiat Research Center (I)
- Targasys (I)
- Vinco (I)

- Emorphia (UK)
- Nokia Research Center (Fin)
- University of Paris 6 LIP6 Lab (F)
- University of Hertfordshire (UK)

Contact

Main Project Contact person: Mme Véronique Daurensan
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                                 (ADANETS project content ongoing)

Status

Just started. Some preliminary work on scenario definitions and unified profile description is continuing.

Project start: 01/2002   Project end: 03/2004

Results

No results are available at the present time.

AMBIENCE (ITEA 00003)

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Goal

The goal of the AMBIENCE project is to jointly create networked Context Aware Environments. The consortium will generate concepts of such environments, and will develop architectures, methods and tools that allow their development. To validate the concepts, the required technologies will be integrated into operational systems. The consortium will focus on the home- and professional in-door domains.

Overview

Ambient Intelligence refers to an exciting new paradigm in information technology, in which people are empowered through a digital environment that is aware of their presence and context, and is sensitive, adaptive, and responsive to their needs, habits, gestures and emotions. Ambient Intelligence throws challenging research questions in several areas of science and engineering. These questions are rather fundamental and their resolution requires multi-disciplinary and multi-cultural research teams that combine input from such diverse areas as computer science, electrical engineering, interaction design, and human behaviour research. This is achieved in the AMBIENCE project.

Details

The proposal deals explicitly with the integration of the key technologies required in future intelligent networked systems:

1. System Architecture (WP1)

2. Context Awareness Technologies (WP2)

3. System Intelligence (WP3)

4. Natural Interaction (WP4)

It will enhance capabilities in a.o. software engineering, wireless communication, system architecture and agent technology, and particularly system integration, through the development of common demonstrators. Identification of user- and system requirements is part of the first phase of the project.

Partners

- Barco (B)	- Thomson MM (F)	- KU Leuven (B)
- CCC (Fin)	- Epictoid (NL)	- Univ. of Amsterdam (NL)
- France Telecom (F)	- NetHawk (Fin)	- Univ. of Paris 6 (F)
- Italdesign (I)	- Adersa (F)	- Univ. of Vienna (A)
- Philips (NL, UK)	- MEMOdata (F)	- ENST (F)
- Thales (F)	- Telisma (F)	- VTT (Fin)

Contact

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Status

Jan 2002: Ongoing research.

Project start: 07/2001   Project end: 06/2003

Results
Project website (public): www.extra.research.philips.com/euprojects/ambience/

CAFÉ (ITEA 00004)

From Concepts to Application in System-Family Engineering

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Goal

The research in CAFÉ will extend the ESAPS results by providing methods and processes, which support independent life cycles of products and of systems using these products. In short, CAFÉ will tie the separate concepts of ESAPS into a unified whole covering the entire life cycle of a product family.

Overview

The CAFÉ project aims to spread the use of the system-family approach, both by adapting neighbouring systems to become part of the family, by maturing existing platforms and by investing when a system-family approach is beneficial. In addition to that, several technical issues, mainly at the front- and backends of development are not yet covered in ESAPS, but are crucial for a system-family approach. These subjects will be covered in the CAFÉ project.

Details

CAFÉ will build on these results, and in addition, fill in gaps that are left to provide the basis for further industrial research, e.g. on test methods for product family assets, design for quality in the system family context, and on system validation. In particular, the following technologies are targeted at:

- Product family development introduction/adoption process: when, and, how a system family approach should be introduced; how to integrate existing processes with the new ones derived from the product-line paradigm.

- A roadmap for product line adoption (including processes, techniques, and tools linking?? all of them). This roadmap will guide product-line adoption.

- Support integration of existing systems into the system families already developed, to share the knowledge, and reduce future cost.

- Support development on heterogeneous platforms and inter-operability.

- Support for dealing with several quality requirements in a product family.

- Integrated traceability, version management and variation support.

- Support for testing and validation in a product family to reduce system & integration testing time (i.e. development time) for family members.

The CAFÉ project intends to bring concepts for product family engineering to maturity so that they can be applied in concrete projects by developing methods and procedures from these concepts. It is based on the same core process as for ESAPS, with focus on the very early and late sub-processes, and the major activities shown at the arrows. The results of the CAFÉ project, encompassing the structure of the assets and the knowledge about methods and procedures, will be used for tools and concrete applications (upper right corner).

Partners

- Philips (NL)	- Rijksuniversiteit Groningen (NL)	- Siemens (D)
- University of Helsinki (SF)	- University of Essen (D)	- Market Maker (D)
- Robert Bosch (D)	- Thales (F)	- INRIA (F)
- Fraunhofer IESE (D)	- Telvent (ES)	- European Software Institute (ES)
- Ivorium (F)	- Istituto di Elaborazione della Informazione (I)	- Omega Generation (I)
- Universidad Politécnica de Madrid (ES)	- ICT-Norway (N)	- JKU Linz (Au)
- TU Wien (Au)	- Nokia (SF)	

Contact

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Status
Just started

Project start: 07/2001   Project end: 06/2003

Results
Not applicable yet

Digital Cinema (ITEA 00005)

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Goal

To define and develop a Digital Cinema system solution. Covering all elements of film production, distribution, storage and replay, but also open to alternative applications of the digital infrastructure.

Overview

The project goal is a complete study of the digital cinema chain. Including production, colour-management, compression, data storage and security over the entire route. Handling of multilingual sound and subtitling is a special point of attention.

A second important focus of the project is the theatre installation : projector, server, sound-system and automation. Here we need to decide on the best storage infrastructure, data-transmission protocol, security and conditional access management from he server to the screen. Simple user interfaces for scheduling, theatre automation and management will be developed.

A third focus of the project aims to support and develop the potential for alternative applications of the digital theatre. We want to develop the required interfaces to show alternative productions, live content (standard or high definition), business presentations and interactive applications.

Details

The work breakdown structure is :

- Work package 1: System Architecture

This work package will define the architecture of a complete Digital Cinema infrastructure starting from the content translation from the analogue world to the digital world, and ending with a theatre screen projected digital movie.

- Work package 2: Content mastering

This work package will define the methods to transform a movie master as produced during the post-production process into a digital movie ready for distribution.

- Work package 3: Content compression

This work package will investigate and implement image compression and pre-processing techniques to support high quality applications like Digital Cinema. The goal is to reduce the volume of data to be stored and transmitted through various channels like cable or satellite.

- Work package 4: Conditional Access and trace-ability

This work package will define the conditional access methods and thus implement encryption and scrambling methods adapted to the Digital Cinema world. The watermark finger-printing anti-piracy method will also be studied and implemented in this work package in order to trace any piracy act that could have threaten the distribution chain.

- Work package 5: Distribution of digital movies

This work package will define and implement protocols for secure transport of content between production and theatres, including satellite, fibre, cable or the use of storage media. This work package will also investigate the possibility to provide Internet-based support in the Digital Cinema chain

- Work package 6: Development of the Server System

This work package will develop and implement a robust image file storage, retrieval and processing system for multiple simultaneous movie projections.

- Work package 7: Digital projector and Image Quality Assessment

This work package will investigate the display and control attributes of a digital projector system aimed at the digital cinema market. Image quality assessment and comparisons with the actual cinema projectors will be performed.

- Work package 8: Content Management and Theatre Management

Research of software solutions for flexible scheduling and rescheduling of film and alternative content (Sports, advertising, subtitling etc.).

- Work package 9: Demonstrator and Quality of Service Assessment

Systems integration and building of a demonstrator in a real-size cinema theatre. Control of Quality of Service of the whole Digital Cinema chain compared with the traditional way.
The project wants to work from and contribute to international standardisation efforts (e.g. SMPTE)

Partners

- Barco (B)
- Philips (NL)
- EVS (B)
- Kinoton (GE)
- Octalis (B)

- Sublime Software (FI)
- Stage Accompany (NL)
- The Computer Film Company (UK)
- University of Derby (UK)

Contact

Project manager: Dirk Maes
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Status

Several individual elements of the system are in the first prototype stage. First integration test are being conducted.

Project start: 06/2001   Project end: 06/2003

Results

Papers have been presented on watermarking and the server system. First Major public demonstration of the project results is planned at ShoWest exhibition in Las Vegas March 2002

EAST-EEA (ITEA 00009)
Embedded Electronic Architecture

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Goal

The need to most efficiently manage the constantly increasing complexity of electronically controlled functions in today's and future vehicles is evident.

The goal of EAST-EEA is to enable a proper electronic integration through definition of an open architecture to achieve hardware and software inter-operability for mostly distributed hardware. This will be achieved by defining a layered software architecture focused on a middleware concept, which provides interfaces and services to support portability of embedded software modules on a high quality level. The architecture will include general commodity aspects as well as specific aspects of proprietary applications.

Overview

In tomorrow's vehicles a high level programming language will enable car designers to implement new functions or to adapt new legal requirements through the existing hardware and firmware even in vehicles after sales and in service. This has to be achieved keeping or increasing safety and reliability standards. The diversity of cars on the market will also be maintained through specific brand-related features.

Details

The work is structured as follows:

General aspects

A scenario for the near future in the fields of systems integration in the automotive environment will be elaborated. Special use cases will be defined, investigated and general requirements are derived. Existing approaches will be collected and evaluated with respect to the specified automotive requirements. Finally, a general architecture will be elaborated to achieve an overall frame work for the work in EAST-EEA.

Runtime aspects

The specification and prototypical implementation of a middleware and communication concept is developed. The requirements are derived from the use cases and from the evaluation of existing solutions. The concept has to cover general requirements as well as add-on domain specific requirements. The middleware will be implemented as well as the interface to the domain specific extensions.

Development and validation aspects

This work package deals with the generic tool environment for architecture development and validation. The following aspects are considered: Specification, simulation, implementation, single test, integration test, validation. It also deals with tool - coupling aspects and open interfaces between tools.

Domain specific implementation & validation

For verification purposes the general middleware concepts and the application driven domain specific interfaces, services and features will be demonstrated in different typical automotive applications.

Partners

- AB VOLVO (S)	- RENAULT (F)	- SIEMENS SBS - C-LAB (D)
- AUDI (D)	- MAGNETI MARELLI (I)	- VECTOR Informatik (D)
- BMW (D)	- ROBERT BOSCH (D)	- IRCCyN (F)
- CRF - Fiat Research Centre (I)	- SIEMENS VDO AUTOMOTIVE (F)	- INRIA (F)
- DAIMLERCHRYSLER (D)	- SIEMENS VDO AUTOMOTIVE (D)	- LORIA (F)
- OPEL POWERTRAIN (D)	- VALEO (F)	- PADERBORN University - C-LAB (D)
- PSA Peugeot Citroen (F)	- ZF (D)ETAS (D)	- DARMSTADT Technical University (D)

Contact

Project manager: Dr. Joachim K. Irion

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Status

Middleware approaches suited for embedded automotive systems have been compiled. Scenarios and use-cases are being analysed. Specifications on the middleware concepts are being built.

Project start: 07/2001   Project end: 12/2003

Results

First tangible results are expected for Summer 2002.

HomeNet2Run (ITEA 00002)

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Goal

To develop and demonstrate an end-to-end network architecture enabling access to information, communication and entertainment services throughout the "broadband home" without the installation of new wires.

Overview

The project aims to define, prototype and validate standards and solutions for residential gateways (which interconnect various broadcast and non-broadcast access networks with the in home network), for high speed wireless in-home networking and for seamless networking in an world of heterogeneous standards.

Details

The project focuses on the following aspects:

Architecture

Provides an overall framework based on user scenario requirements.

Residential gateways

The project aims to define and prototype the home access platforms, the residential gateways that interconnect the various broadcast and non-broadcast access networks with the in-home network. These residential gateways establish the relationship between content providers, distributors, and consumer appliances connected to in-home digital network.

Wireless in-home networks

Key point of the project is the role of wireless media within the "home network environment". It is intended to make wireless high speed communication in the home reality, based on the validation of specifications currently under development in ETSI BRAN Hiperlan2.

Heterogeneous networks

The co-existence of different technologies (1394, Ethernet, ...), standards and protocols (IP, UPnP, HAVi, ...) and application domains (Telephony, Video, Data, ...) is emerging. The project intends to come up with bridging solutions between those most likely to come onto the market.

The results of the project will be validated in demonstrators. The project works closely with standardisation bodies such as DVB, ETSI and IEEE.

Partners

- Alcatel ME (B)	- Thomson MM (F)
- ATLINKS (F)	- DTB (D)
- Canon Research (F)	- T-Nova (D)
- CIAOLab (I)	- CEFRIEL (I)
- Grundig (D)	- FhG IIS (D)
- Philips (NL,B)	- University Essen (D)
- Sony (D)	- IMEC (B)

Contact

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Status

User scenarios have been collected. Other work is in progress.

Project start:01/2001   Project end: 12/2002

Results

No public results are available currently.

KLIMT (ITEA 00008)
KnowLedge InterMediation Technology

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Goal
The goal of the project KLIMT is to define, develop and demonstrate a networked Knowledge Management Platform for future dynamic Virtual Private Cyberspaces in the Emerging Digital Economy (Internet, UMTS).

Overview
The goal of the project is to define, develop and demonstrate semantic inter-operability between abstract components (workstations, PCs, servers, legacy systems, applications, databases, document repository, information streams, ...) belonging to a virtual networked infrastructure and to validate concepts of new Platform architectures for intermediation services, applied to the Knowledge management area (text, voice, data).
The Internet (e-Business), the future wireless UMTS infrastructure (m-Commerce), the global Information access (knowledge portals) present a new paradigm of dynamic Virtual Communities in the digital economy, but the mechanisms to support it today are very immature. Technical (configurability, security, inter-operability, performance, evolvability, content processing, ...), legal (Intellectual Property Rights) and engineering (architectures, standards, methodology and tools) issues remain unsolved. The project will provide an architectural framework for the new Information Technology paradigm, giving up the traditional client-server model to introduce the new and more complex model: content providers, end-users belonging together to a common Virtual Community via a connected world and through an Intermediation domain with Standard Services: security, search, information navigation, profiling, analysing, etc.

Details
The KLIMT Project will:

- quantify the characteristics of content or stream exchanges: type of data, structuring data, legacy system architecture, brokerage protocols, standardisation of APIs, software download, ...

- determine the generic services: mining, searching, processing, evaluating, indexing, distributing, profiling, customising, securing, ...

- identify the roles (content provider, end-user, Intermediator for cataloguing, indexing, searching, retrieving, profiling, securing, exchanging, ...) and the standards involved in the cooperative work.

- specify the value chain for content processing.

- create and demonstrate implementations of solutions in the K-domain to better aid understanding of the issues and the acceptability of proposed solutions.

Partners
- THALES Communications
- Electrolux Zanussi
- 4EME Millénaire
- Isoft
- Sinequa

- Softeco Sismat
- TTS
- I&IMS
- Université Paris 6 (LIP6)
- Politecnico di Milano

Contact
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Status
Labelled in October 2000, not yet started.

Project start: n.a.   Project end: n.a.

Results
Not yet applicable.

POLLENS (ITEA 00011)

Platform for Open, Light, Legible & Efficient Network Services

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Goal

The goal of POLLENS project is to define and implement a software solution which could help network operators to envision, design, develop and configure enhanced transport and network services over IP. Specifically, POLLENS will propose a flexible and dynamic middleware platform enabling to explicitly program novel traffic control solutions and scheduling mechanisms, configure network architectures on the fly and add intelligence to the IP routers in order to support future value-added services still to be developed today.

Overview

POLLENS aims to build a European workforce capable to develop and deploy flexible routers, network middleware and value-added transport services. The solutions promoted will be demonstrated by prototypes running on a platform composed of real equipment. Some of the technologies involved in this project have already been prototyped by the project partners, but many have also to be specified, implemented and experimented. The specification of these services will be done in relation with standardisation organisations and fora.

Details

The work breakdown structure is:

Work package 1: Project management

The main objective of this work package is to support the technical work packages on administrative, financial and managerial issues. That also includes the promotion and the diffusion of the results through participations to conferences, standardisation bodies and fora, the publication of papers, the maintenance of a web-site as well as the management of the relationships with other European projects.

Work package 2: Programmable router

This work-package aims to develop an open, scalable, reliable, hardware- and OS-independent software solution, able to supply the network applications defined in the WP3 with basic and advanced routing functionalities. This Integrated Routing Suite kernel intends to be generic and flexible enough to run on a full range of IP-based equipment and thus to favour the reuse of software components as well as to reduce the development cost of new services. A framework will specify rules allowing the definition of various routing profiles according to the user's needs. Demonstrators, composed of the software components developed in WP 2&3 and validated in WP 4, will illustrate the ideas expressed.

Work package 3: Network middleware & services

The objective of this work package is to define and prototype new network services, providing solutions in terms of adaptive QoS, traffic control, dynamic admission control and content delivery. These services will use the functionality and properties of the Integrated Routing Suite kernel developed in WP 2.

Work package 4: Validation

The goal of this work package is to validate POLLENS demonstrators, resulting from the integration of the software components provided by WP2&3. To do that, a target platform, based on partners' equipment, will be defined, built up and connected to experimental networks.

Partners

- Alcatel CIT - Research & Innovation (F)
- Thales Communications (F)
- Ericsson/Telebit (DK)
- 6WIND (F)

- CRES, Centro per la Ricerca Elettronica in Sicilia (I)
- Università di Roma "La Sapienza" (I)
- Università di Palermo (I)

Contact
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Status
Just started. The specification of new services and the definition of the IOS-kernel architecture are on-going.

Project start: 07/2001   Project end: 06/2003

Results
No results are available at the present time.

ROBOCOP (ITEA 00001)
Robust Open Component Based Software Architecture for Configurable Devices Project

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Goal

The GOAL of the ROBOCOP project is to define a component-based software architecture for the middleware layer of high volume embedded appliances. High volume embedded appliances vary from cellular phones and personal digital assistants to internet and broadcast terminals such as set-top boxes, network gateways and digital television sets. The projects aims to solve a number of critical issues such as the enabling of software IP exchange and supporting (distributed) developments based on resource-constrained, robust, reliable and manageable components.

Overview

In recent years the IC technology domain made a lot of progress in defining interface standards at different abstraction levels and developing a methodology to allow for the interchange of hardware components for systems on silicon development. The purpose of the ROBOCOP project is to develop a similar approach for embedded software technology. A component framework and models of software components at different abstraction levels will form the core of the ROBOCOP architecture. This approach enables a vendor independent trading of software components (and associated IPR) in the embedded application domain. Different abstraction levels will be defined for different purposes of use, for instance a high abstraction level could be made available free of charge to allow the product manager to do a functional level simulation where only footprint and processor speed or power demand are exposed from the model. In the case of a system architect a model that also provides details on real time behaviour or resource manageability could be applicable and available under certain legal conditions (basic fee, NDA, MOU and the like).

Details

The demand for inter-operability and exchangeability of the components in the framework (originating from one or multiple suppliers) calls for the definition of a well-defined framework architecture with open interfaces on the operational side. In this context the approach chosen in a number of international standardisation bodies to apply a virtual machine concept, as for instance the Java VM, will be investigated on its applicability. Next to these general framework concepts, there are a number of special interest areas that the project wants to support in this architectural framework and as such have to be covered by the program.
Among these issues are the following:

- Applicability for both the stationary and nomadic platforms domains

- Investigate the applicability of the technology in industrial control systems

- Robust protocols for component - framework and inter component communication

- Resource aware operation (for bandwidth, power, footprint and cpu/dsp use), both passive (monitoring) and active (control)

- Distributed SW development and multi vendor operation

- Enabling of SW components (IPR) trading

- Robust and reliable operation in real-time and over time (life-time)

- Allow for controlled upgrading and extension

In addition to these primary tasks there is also the interesting fact that this approach supports the 'mastering of the complexity' of the SW engineering process. This 'side effect' will be promoted during the project. Last but not least there is the synergy to the 'IC design domain' and the possibility to adopt or extend a common HW/SW co-design approach.

Partners

- Nokia (FIN)
- CSEM (CH)
- SAIA Burgess (CH)
- Visual Tools (E)
- ESI (E)

- TU Madrid (E)
- FAGOR (E)
- IKERLAN (E)
- Philips (NL)
- TU/e (NL)

Contact

Project Manager:	Mr. Jean H.A. Gelissen
	E-mail: jean.gelissen@philips.com
website:	www.extra.research.philips.com/euprojects/robocop

Status

The project has recently been started with a two-day project start-up meeting. Detailed plans have been made and four activities have been initiated. Agreements on the activity level and project level corporation have been captured in a project handbook. These activities (being active throughout the project) are dealing with the following research and development areas:

A1 Overall framework architecture.

A2: Robustness and Reliability Operation.

A3: Stationary and Mobile platform diversification.

A4: IPR Trading and Abstract Component Views.

A number of meetings have been planed including two joined workshops with the ITEA project VIVIAN and a full week workshop to consolidate the first project achievements.

Project start: 07/2001   Project end: 06/2003

Results

The project, still being in the analysis and specification phase, has made significant progress with respect to the definition of the ROBOCOP framework that is intended to host exchangeable components for the embedded application domain. Special attention has been given to robustness and reliability as well as to scalability during the definition of this framework and the framework related parts of the components that are hosted in the framework. Also the support for streamed media, an important aspect of the application domain, is addressed in the framework.

Appendix D: Progress Report summaries

D.1 Call 1

ATHOS

Progress report summary

The aim of the ATHOS project is to investigate, develop and validate an advanced distributed computational environment as the basis for easy deployment of basic and advanced communication services, in a fast provisioning perspective.

The following goals have been identified:

- To define and develop an advanced architecture based on middleware platforms and technologies such as Mobile Agents (MAs), Java and CORBA, in order to build up an appropriate set of service components, exploiting available APIs and platform core functionality.
- To identify a system architecture capable of supporting integrated communication and Internet value added services in a flexible way.
- To define Application Programming Interfaces (APIs) in order to make the development of new platform services and applications easier.
- To design, develop, integrate and evaluate the systems required by the reference architecture.

Some of the key innovation elements in this project are:

- the integration of emerging technologies to create an advanced middleware that supports the convergence of Internet and telecommunications
- the application of MAT and Java technologies in a mission-critical environment such as that of telecommunications
- the utilisation of a layered service management system that integrates a MA-oriented Service Management System with a service-oriented Application and Service Management System. The lowest layer takes care of the management of services implemented as MA,. The highest guarantees the applicability of conventional services as well as MA-based ones, as its logic is independent of specific service implementations.
- the application of Quality of Service (QoS) management based on the Service Level Agreement (SLA) in an integrated network scenario
- the realisation of a set of component allowing QoS measure and SLA checking, packaged as Object Components ("SLA JavaBeans"), hiding processes such as collecting, aggregating, translating and reporting - both to the provider and to customers - and accessed through a standard (Java) technology-independent interface
- the exploitation of convergence between MAT and CORBA contributing to the assessment of an appropriate standard.

The Athos project started on March 1st, 2000 with all partners, according to the plan in the FPP. A project start up meeting was organised in Paris, France on March 30th after a preparatory pre-meeting in Grenoble on January 5th.

There has been good progress, with more that 12 Working Groups working to obtain ATHOS (i.e. consortium-wide) and public deliverables. The overall development of the project has substantially improved compared to the first reporting period.

In the current period the project continued into its technical and development phase (following the specification phase) and specifications for the final testing and demo were made.

A Project Coordination Committee (PCC, daily management) was formed and has met a number of times.

The PCA process ended.

A Web site was created (www.itea-athos.com).

BEYOND

Progress report summary

Final Review

On 20 November 2001 the BEYOND project team completed this project with an Open Seminar and Exhibition of 16 demonstrations resulting from the project, which was hosted by BARCO in Belgium. Directly after this successful event the final Review Meeting was held, with nothing but positive feedback from the reviewers.

Organisation

BEYOND started on September 1st 1999, according to the plans in the FPP, with Dutch and Finish partners. Belgian and Austrian partners joined one and two months later. All the German partners had to leave the original project plan, (official withdrawal in November 2000), because of lack of funding from the German Public Authorities.

As a consequence of this withdrawal, the project has been redefined in three work packages instead of the original four. Deliverables 6, 7 and 12 have been dropped and deliverables 9 and 13 have been redefined and agreed by the reviewers.

During the project five Project Team Meetings were organised plus two Open Seminars with an exhibition.

The Project Consortium Agreement was signed by all partners and five PCC meetings were held. In this reporting period the PCC meeting was in Kuurne, Belgium on 19 November 2001. All PCC members were represented.

Results in the reporting period:

 • Deliverable 11: 'Functional Specification and Architecture' finalised

 • Deliverable 13: 'Software Architecture for functional modelling of UI' finalised.

 • In reporting period the partners were very active and a lot of effort was dedicated to a good Publication & Dissemination Plan.

 • Public versions of all deliverables finalised are available or will be made available soon) on the public website of BEYOND.

After the review a few issues remained unresolved:

 • A contribution to the technology roadmap discussion in ITEA as promised during the Review Meeting, has been planned.

 • A public version of deliverables 9 - 10 - 11 - 13 will be made and put on the external website.

 • The Belgium national reviewers have already given their 'OK'; other partners still need to organise final national review meetings.

BRIC

Progress report summary

The aim of the BRIC project - Broadcast and Internet Convergence - is to study and experiment with technologies that make possible secure access to both digital broadcast and Internet services from the same network, with the same terminal.

To achieve this aim the project follows two approaches:

- access to Internet data content transported over a broadcast channel from a Set Top Box (or a PC), with or without return channel capabilities,

- transport of real-time broadcast services and other complex content over an IP-based network, using a general-purpose PC-based terminal (or an STB).

These two technologies will allow either Broadcast operators or Internet Service Providers to offer services that converge on the same type of market.

Critical issues that will guarantee the profitability of these markets are protection of content and security of access. The new techniques needed in this domain are the other field of investigation of this project. Although the approach is general, in the context of the project, experiments will focus on IP-based network type of applications.

Technical progress / results achieved

The main event of this reporting period has been the agreement and finalization of the detailed definition of the final demonstrator for WP3 and WP4. A complete list of hardware and software modules has been established. A work plan and schedule for integration have been set.

In addition to this major achievement at project level, WP2 almost completed their tasks, and a public demonstration of part of their results was made on December 19 to those who attended the ITEA-France meeting.

Major dissemination activities

- Contribution to the ITEA Symposium in Berlin on October 10 to 12, 2001

- Demonstration for the ITEA-France meeting in Rennes on December 19, 2001

- Response to a call for a proposal on copy protection from the DVB-CPT ad hoc group

- Contribution to the DDIC (DVB-DAVIC Inter-operability Consortium) inter-operability tests at the Braunschweig inter-operability test center with INA equipment including the DirectIP and Tx-In-Band features developed in WP2.

CO-VAR

Progress report summary

Technical Progress / results achieved

In the reporting period from 1.7.2001 to 31.12.2001 the following were achieved:

- In WP2, a full and systematic overview was made of ways in which existing visualisation products can support the use case. An overview of current interaction mechanisms between large screens and end-users (cr. use case) was also made.

- In WP3, a study was completed on the topic of content-based indexing for images, audio, video, and 3D objects. Since this is an overview of algorithmic approaches, progress has thus been made towards the implementation of the indexing engine for the VAR objects database in WP3.

- In WP4, an implementation concept for ways to visualize 3D object interactions has been elaborated. This achievement allows analysis not only of the geometric hierarchies of 3D objects, but also their dynamic aspects (object actions). This will also be further elaborated in WP5 to provide a platform-independent visualisation capability for interactions between objects.

- In WP5, a study was carried out of the programming languages that can be used in the object translation engine, so as to provide platform-independent scripting capabilities.

- In WP6, a case study was proposed to implement a haptic 3D interface as a first stage of the use case proposed in WP2.

- In WP7, a study on fast tuning of multi projector systems was done. This has helped optimise 'auto-imaging' (an auto-alignment product for CRT multi-channel projection systems) for typical VAR solutions (cfr. use case).

- In WP8, functional access to mail entities has been tested using the Outlook object model. Thus progress has been made towards a mail agent to be used in the COVAR field evaluation support in WP8.

<u>DESS</u>

Progress report summary

Technical progress / results achieved

All the Work packages have progressed very well and nearing completion during this reporting period. All remaining deliverables for all WPs have been completed, including the Methodology document, which is the result of WP1. WP4, which is dedicated to the dissemination of the results, has progressed very well during this last reporting period, but this will be discussed further on. In addition, the project has successfully passed the ITEA review, which was held in on January 22nd, 2002.

Major dissemination activities

Since the DESS project relies heavily on dissemination, this has been implemented in a separate WP (WP4). The dissemination aspect has been two-fold, with extensive internal dissemination and public dissemination.

Internal dissemination: presentations/training, plus exchange of technology via the internal website (app. 3000 files - 238Mb), several email lists (+ 5000 emails) and through the 28 internal meetings and workshops that have been held.

The external dissemination started mainly after the ITEA symposium in Toulouse and since then, contacts have been made with several other projects working on related technologies in order to exchange information and therefore increase the added value of the various projects. More than 20 publications have been issued related to the DESS Project, and DESS project members have been present at more than 15 international conferences/workshops. In addition, two international conferences were organized or co-organized by partners of the DESS Project. In order to facilitate external dissemination, three posters were made and used for the project. A website has been set up (http://www.dess-itea.org), on which public project information has been placed. The DESS home page has also been linked to other relevant websites. Due to these efforts, the DESS project has been contacted by companies and individuals outside of the consortium in countries ranging from France and England to Israel with requests for information. Contact has been made with standardization bodies such as the OMG, but this process seems to be more difficult and time-consuming than anticipated. It will, nevertheless be continued. In addition, DESS will provide input to other (new) projects such as EMPRESS, MOOSE, EAST, etc. Technical validation will be done by some of the DESS partners.

Managerial issues

DESS should have started on 1 July 1999, according to the plans of the first FPP. However, due to differences in the funding situation in each country, the partners could not all start to work actively on the project straightaway. Moreover, the MIP partner (DK) had to leave since they could not get funding. Key aspects of their limited planned contribution have been taken over by other partners. For these reasons, a Change Request was issued to shift the start date of the project to 1 October 1999 and update partner involvement. A second Change request was issued to reflect a manpower change for Philips, announce the legal identity change for some of the partners, and to request a three-month extension, resulting in an end date of 31 December 2001. A new Full Project Proposal has been issued to reflect these changes. The first and second Change Request and the associated update of the full proposal have been approved by ITEA.

The funding situation has been unclear for some partners for a long time, which has led to problems for some of the partners. The Italian partners have passed a Technical and Financial Review, but they are still waiting for formal agreement. The expectation is that this approval will be obtained in the first half of 2002.

The PCA has been approved by the PCC and has been signed by all partners.

In the DESS project there are 19 partners from six countries. The project has been split up into five Work Packages that are further split into different tasks. Each WP as well as each Task has a dedicated leader. The management success of the project is based on a structure that allows a high degree of distribution of responsibility and thus reduces the delays and misunderstandings common to a more classical pyramidal approach. For each partner there is someone responsible for the DESS project, thus creating a kind of matrix organization (Task Leader, Partner Leader). Contact details are on the internal website to enhance good communication.

There was very good cooperation and communication (using very efficiently Internet technology) between the Project Partners. Before the start-up of the project we had three preparatory meetings and one kick-off meeting.

During this reporting period: two plenary meetings, two workshops and three PCC meetings have been held, resulting in a total of nine plenary meetings, seven workshops and eight PCC meetings, not including the preparatory and kick-off meetings.

EUROPA

Progress report summary

This report presents progress achieved in the second half of 2001, covering months twenty-two to twenty-seven of the EUROPA project. After this reporting period a further three months will be fully devoted to the completion and integration of the ITEA EUROPA Common Demonstrator.

EUROPA is the acronym for End User Resident Open Platform Architecture. The aim of the project is to enable the full possibilities that interactive Digital TV (iDTV) can offer in a number of selected application areas.

These areas are related to privacy protection, security and enabling of electronic commerce, the introduction of advanced content formats and end-user participation, convenience and personalization. The project has been specified and implemented and is now in the process of validating extensions of functionality for these areas. This will lead to the exploitation of new content concepts and related business models in the iDTV domain. All these activities have to be carried out within the context of a reference architecture that complies with the current developments in Internet and Broadcast standards. In practice this involves DVB-MHP (V1.0 and V1.1), which applies MPEG-2 and the gradual introduction of MPEG-4 technology. This will result in platform- independent interface specifications (at the application level) abstracting from the specific implementation platforms to be reflected in future versions of the related standards (as already is the case for some parts of the security and enabling of electronic commerce in DVB-MHP V1.

Twenty-seven months after the start, the project has entered the final stage with most of the effort focused on the third work package, the demonstrator of platform validation and assessment. The set-up of the third work package started in the last reporting period, and additional meetings were held with the partners in Turin and Paris (twice) in this reporting period. In addition to the project-wide meetings, there have been several activity level meetings. The plan for the scenario of the common demonstrator has been concluded. Both the content for this and the software needed to implement the scenario on the platform have been assembled and tested at component level. Assessment of the capabilities of the software component indicated that the scenario would need to be modified, mostly to accommodate for shortcomings in the reference hardware layers. A detailed scenario plan based on the results of this assessment has been created. This was presented to the partners in October. After some minor adaptations to accommodate application components in the User Interfaces (to allow for the shortcoming of the graphic displays of the reference platform compared to the development platform), the scenario was approved. The common demonstrator implementation and documentation (the third major deliverable of the project resulting from WP3) was started in the last two months of the reporting period. Some minor shortcomings in the reference hardware have hindered progress, but these are unlikely to impact deadlines for the final deliverables.

With respect to the output and dissemination of project results, the advanced content group are still involved in the ISO SC29/WG11 "Multimedia FrameWork" (MPEG-21). Our project is the main contributor to the "Terminals & Network" chapter of this technical report; a representative of the project is the main editor of the working draft for the new standard. Liaisons with the related FW-5 IST programme projects NexTV, OCCAMM and MyTV projects have been continued. The EUROPA project will share a common demonstrator platform with the NexTV project. In the reporting period, support has been provided to the NexTV project to ensure a successful demo at the 2001 IBC conference, where the QoSRM part of the EUROPA project has also been demonstrated.

In addition to these, the project has made presentations at three international conferences, as well as showing several demos during the latest of these:

• ICME, International Conference on Multimedia & Expo, Tokyo, August 22-25, '01.

• ISTB, International Symposium on Broadcasting Technology, Beijing, August 26-28, '01.

• ITEA Event 2001, Berlin, October 11-12, '01.

For the MHP-Java standardisation this period was of great significance. At the IFA2001 in Berlin and the IBC2001 in Amsterdam, the capabilities of the MHP-Java terminals were demonstrated for the first time to the public. This included the demonstration by both European and far-eastern manufacturers of terminals of iDTV and STBs. Philips' software and IC technology were a significant part of the demonstrations in many areas. For the MHP development community, Philips demonstrated a SDK (Software development Kit) for the basic MHP middleware stack.

This SDK included components used in the EUROPA project to demonstrate the flexibility of the concept and show the potential to expand and enhance the capabilities of such middleware. At IBC a number of companies used the reference platform hardware, particularly the SMBs of Finland, (Finland is the spearhead of MHP adoption world-wide). This shows the flexibility of that platform for use outside the development labs of the major consumer companies. In addition Philips has a new software company that will be responsible for the marketing and sales of middleware and applications for the emerging MHP market.

This middleware will be distributed unbundled from the hardware platform and provides an excellent basis for the future commercialisation of the results of the EUROPA ITEA project. This commercialisation phase is expected to starting in the second half of 2002, and will fulfil the potential of MHP-Java platform as hybrid broadcast IP terminals. In particular the e-commerce extensions are expected to lead this commercialisation with time-shift and advanced graphics following in 2003.

During the reporting period several significant events took place with involvement of the EUROPA project. There have been presentations at the ICME (International Conference on Multimedia & Expo) in Tokyo, the ISTB (International Symposium on Broadcasting Technology) in Beijing and the 2nd ITEA Symposium in Berlin. The presentation in Beijing resulted in a request to publish a Chinese translation of the paper in a leading Chinese publication on broadcast technology as well as an intense relationship with the ITRI in Taiwan that has already resulted in potential joint projects that are beneficial for the adoption of MHP technology in the Asia-Pacific region. At the ITEA Symposium there were three demonstrations of the individual functionality extension areas of the EUROPA project.

In conclusion, the business and standardisation interest in the core technologies of the project form a good basis for the dissemination and application of the project results. In a few areas the dissemination to standards activities as well as to business units is already taking place. The implementation of the framework as well as the preparations towards the (individual and common) demonstration/validation activities is in good shape.

PEPITA

Progress report summary

Technical progress / results achieved

PEPiTA delivered the new version 2.4.2 of the JOnAS Enterprise Java Bean platform, compliant with new versions of EJB and J2EE specifications, extended with common middleware services, such as security, with enhanced transaction support including state-of-the-art research results, such as Open Nested and Closed Nested Transactions, with enhanced sophisticated persistency support.

The developments of the security gateway were completed, with security features for hiding network topology, for central user authentication, for access control to services, for single sign-on to password-protected web resources, and for auditing of user actions.

The PEPiTA demonstrator for universal access to services has been finalised to integrate the dynamic protocol stack mechanism, thus showing an end to end personalized universal service access scenario.

The main activity on smart cards was dedicated to support the new generation of Palmera Java card in the cryptographic and profile management services, and to provide these services and cards to PEPiTA partners for the demonstrators.

At the end of the project, in December 2001, all deliverables were completed.

Major dissemination activities

The "secure access to portal" prototype and the "portfolio" demonstrator were demonstrated in the 2nd ITEA Symposium, 11-12 October in Berlin.

PEPiTA was represented at the 1st ObjectWeb conference Paris, Oct 30-31 2001. Five demos based on the PEPiTA EJB platform were presented.

The work on policies for dynamic stack composition was presented in the paper "Automatic composition of systems from components with anonymous dependencies specified by semantic-unaware properties" and accepted at the TOOLS Eastern Europe 2001 Conference.

Dissemination of results is achieved through the PEPiTA public web site, http://www.objectweb.org/pepita.

PEPiTA is also referenced on the Objectweb site, http://www.objectweb.org, which distributes the PEPiTA EJB platform, as an open source under the name JOnAS. More than 15000 hits per day occur on this web site, and 50000 downloads of PEPiTA EJB platform have been realized so far.

PEPiTA is active in standardization in the Third Generation Partnership Project working groups on User Profile and Subscription management.

Finally, PEPiTA partners working on the EJB platform provided support and technical assistance to the TASSC ITEA project, as well as to the Parol RNRT project and the Impact RNTL project.

Managerial issues

A Change Request has been issued in the reporting period, due to the withdrawal of Idoox s.r.o (CZ), as a result of a change of commercial strategy of this start-up company.

The major goal in the reporting period consisted in putting sufficient manpower into the finalization of demonstrators, with two plenary sessions to assess integration progress and follow up action plans on the last six months of the project.

<u>RTIPA</u>

Progress report summary

The work for the RTIPA project has concluded in a combined demonstrator. A wide set of applications has been tested in that combined set-up. In the demonstrator the effectiveness of the architecture solutions for achieving a guaranteed QoS level has been shown. The network architectures that support QoS policies as well as security have been tested under circumstances of real load by the applications in this final demonstrator.

The set up of this final demonstrator was very impressive and RTIPA was very proud to see this joint cooperation work going so well. The list below is a short list of applications tested together in the experimental network that had been brought together.

• Low delay audio codec	• MPEG4 client server
• MPEG2 /4 video broadcast	• EPG
• SMIL	• Software IP phone
• Hardware IP phone	• Video streaming for surveillance
• Mobile Internet	• Web collaboration
• Call manager	• QoS Policies Management
• Security Policy Management	• Combined application and network services (Multicast, QoS).
• Security Policy Management	• Combined application and network services (Multicast, QoS).

Major dissemination activities

A joint effort of RTIPA partners resulted in the major dissemination activity for RTIPA during the reporting period at the ITEA symposium in Berlin.

Managerial issues

The project ended by end of December 2001. Editing work for completing the deliverables will continue during the first quarter of 2002. The results will be available on the RTIPA Web site. Deliverables that are public within the PCA agreements will be made public on the RTIPA website by end of April 2002 at the latest. There are no further managerial issues.

TASSC

Progress report summary

This report presents the progress achieved in the ITEA project TASSC from July 2001,1st to end of December 2001. This period covers as the final development period, the completion of the demonstration, and the wrap up of all the documentation.

Major items and event occurring during this period

  • Second ITEA Symposium (Berlin October 2001).

Work progress

The project has now entered its final phase, the main documents mentioned in the deliverables are now available, most of them as final versions. The final demonstration has now been released (it was validated at the second ITEA Symposium held in Berlin in October 2001).

In terms of technical results (paper and software):

  • Software development is now complete. Major issues: two platforms were tested individually, interoperability has been limited to Card behaviour exchange, and a set of toolkits have been made.

  • Tools software is now presented with an introductory document presenting each of the tools, their use and status (product, prototype, TASCC-specific developed scenarios).

  • Risk analysis documents preliminary version available.

  • Final demonstration and deliverables wrap up.

  • Market analysis different domains covering Smart Card, e-commerce on various terminals, competitive solutions.

Major dissemination activities

  • Presentation of a summary the project to be presented to Global Platform, deferred due meeting cancelled.

  • TASSC aspects discussed at JavaCard Forum.

UMSDL

Progress report summary

Technical progress

- WP1: Contribution to a design process for using UML and SDL in combination.

  This WP is closed. Some updates to the documents produced are planned, depending on the findings from WP4.

- WP2: Specification of tool modifications and extensions.

  This WP is completed.

- WP3: Design and realisation of the tools.

  The first prototype, supporting translation from UML to SDL is available. The second prototype, supporting strong integration of UML and SDL is well advanced and is due for end of February.

- WP4: Experimentation.

  Is due to start in January.

- WP5: Dissemination.

  Has been done both at ITU and OMG. Talks in conferences have been given.

VHE MIDDLEWARE

Progress report summary

Technical Progress / Results Achieved

During the second semester of 2001, the focus shifted from Work Package 1 to the other five Work Packages.

In Work Package 2 the elaboration of interfaces for managing user profiles progressed. This is supported by a shift of person months to the particular task by Bosch. Other partners have focused on specifying the interfaces for the portal services and the access to IP-based (http-based) services by accommodating the OSGi approach.

After preliminary work during the first half of the 2001, progress on the second half was made as planned, concentrating on the development of a user Smart Card, development of an application management centre, and the development of a personalisation centre for VHE Smart Card. First demonstrators are available and these were shown at the 2nd ITEA symposium in Berlin.

Major progress was also made in Work Package 4, involving joint efforts Paderborn University and VTT concerning VHE UI. The results of the transcoding of UIs based on mark up languages have been captured in a joint conference paper.

Within Work Package 5, some early validators have been worked on. First demonstrations were shown at the ITEA symposium and/or will be part of the planned ITEA workshop (see below).

As part of Work Package 6, an international workshop for Virtual Home Environments is being organised by members of the project consortium. It will take place in February 2002 in Paderborn. A call for papers was distributed in November 2001 and sixteen high-quality papers have been accepted for presentation at the workshop. Eight of these papers are from authors outside of the consortium. The preliminary program foresees 20 talks, one keynote speech, an exhibition, and visits to the computer museum at the "Heinz Nixdorf Forum".

Major Dissemination Activities

The VHE Middleware project actively participated in the second ITEA symposium which was held in Berlin 10-12 October and presented preliminary project results. Further, papers were submitted and accepted for conferences and publications, and in addition, seminar presentations and demonstrations were given during the reporting period. Many of these dissemination activities were the results of combined efforts from two or more VHE partners.

Managerial Issues

The cyclic PCC meeting took place in Berlin on October 10, 2001. Unfortunately, the representatives from Bosch and Nokia and Fujitsu-Siemens were unable to attend.

A major outcome was the confirmation that both PHILIPS-B and PHILIPS-NL left the VHE project at the end of August 2001.

PHILIPS NL gave a presentation of the BlueBerry system, which fits into the wireless environment of the VHE scenarios and could be used in higher level demonstrations. It is being investigated whether evaluation boards can be made available to the project in order to permit partners to continue work on the topics. This needs to be discussed with and verified by PHILIPS.

D.2   Call 2

@TERMINALS

Progress report summary

In previous reporting periods the @Terminals project was characterized by various changes in the project setup, mainly due to funding issues. In the last half year the @Terminals project has finally reached a stable state. This period has seen technical progress and a successful first project review.

Technical progress / results achieved

Within WP2, a first version of the Adaptive Content Delivery Framework Architecture has been developed. This architecture has been described in two deliverables: "Architecture specification V1" and "Architecture Design V1". Both deliverables will be worked out in more detail in the coming periods. While WP2 has focused on the overall architecture, WP3 has been working on application and engineering techniques. The work performed has resulted in two deliverables: "Terminal and application engineering concepts" and "Process management guidelines". These deliverables describe the results that WP3 has achieved on the "service engineering framework", the definition of service development guidelines, the creation of a systems development handbook, the creation of C-compiler and work on verification methods. The architectural and engineering concepts developed in WP's 2 and 3 are validated in WP4. The results of this WP have been summarised in the deliverable "Specification of Trial and Convincing Applications".

Major dissemination activities

Parts of the WP3 work on process management have been submitted for the SEPG 2002 symposium. One of the chapters in the WP3 deliverable "Terminal and application engineering concepts" has been published in the proceedings of the 8th international SPIN workshop. The first version of the Online Terminal management demonstrator that is being developed in WP3 has already been shown during the project review in Berlin, and the ITEA symposium that has also been held in Berlin. Local dissemination has also taken place in Spain where the local partners participated in two public events.

Managerial issues

Although technical progress has really taken off in this reporting period, funding issues have not yet been totally resolved. At the end of the previous reporting period, the French partners had to leave the project for funding reasons, resulting in a second change request for the @Terminals project, which has been approved in this period. The Italian government has still to approve the funding of the Italian partners, resulting in a smaller contribution from the Italian partners than foreseen. The PMT is investigating the delays this will cause.

NETCARE

Progress report summary

Technical progress / results achieved

The specification of software components (WP2) is almost finished, except for the Irish components which are delayed due to delays in granting the funding from the Public Authorities. Existing delays reported in previous Progress Report has been recovered for the rest of components.

Regarding the development (WP3) almost all the components have been finished and we are entering in the integration phase.

In which regards to Trials (WP4), apart from the development of the required software components, the progress up to date reflects the detailed definition of Trial 1 scenarios.

Major dissemination activities

The NETCARE project was presented at the Congrès e-Colloque dedicated to télémedicine in Vannes in September 2001.

Poster presentation of the project during 2nd ITEA Symposium, Berlin 11-12 October 2001

Managerial issues

During the reporting period the more relevant facts regarding Management has been the following:

Project Review on 10th September in Madrid, which was passed successfully, with minor recommendations about exploitation and dissemination activities.

Formal acceptance of the 2nd Change Request (sent on 29th June 2001) via email on 4th October. These changes include:

- a change in partnership as the Portuguese partners have withdrawn from the project due to funding problems (unavailability);
- this in turn has lead to organisational changes (WP's leadership) and changes in the anticipated developments;
- nevertheless the project consistency is unchanged and the general goals and results remain the same as those assumed by the initial partners.

Second version of D1: "Project Work Plan / Quality Plan" has been issued on July 2001, adapted to new situation after 2nd CR and including new detailed WP3 plans.

Funding: French and Spanish partners have been funded for year 2001 and their work has been performed on schedule.

In Ireland funding was granted very late in the year and consequently work has started with more than a year of delay. This will introduce delays in the final version of some of the deliverables and in formal project finalisation, that will be reflected in a third version of the Project Plan (D1.1.). Also the market situation and commercial interests of IMS seem to have caused IMS to slightly change its contribution. This could lead to a 3rd Change Request. This issue was discussed in the PCC meeting at the beginning of February.

SOPHOCLES

Progress report summary

The global specifications of SOPHOCLES are now in the consolidation phase with the participation of all partners. The document was available on 15 February.

The main results are :

- Definition of the cyber enterprise model and its main characteristics and functionality. Special effort has been expended on the definition of the cognitive interface.

- A complete description of a radio application (control and data), identification of VCs, description of the interfaces, identification of the needed techniques.

- Study of distributed simulation techniques (Corba or RMI based) for Yapi, Array-OL,, etc.

- Definition of a cycle accurate distributed simulation environment based both on the IPITEC MADE simulator and on the LICO communication library.

- Definition of the Array-OL Archi formalism for architecture description, and for mapping signal processing application to architectures.

- Use of Esterel Studio for automatic generation of validation scenario

- Definition of a basic cycle-accurate distributed simulation environment for VCs and analysis of an advanced VC communication model.

- A Cyber Enterprise web environment is setting up at ENEA.

THALES Communications (TCFR) is member of OMG and VSIA. TCFR will work to disseminate the results of the project into Workgroup of these organisations. Philips is member of the SystemC language working group. In this working group, standards are proposed for SystemC. YAPI as an instance of Kahn Process Networks is discussed as a standard in the SystemC environment.

Due to the non participation of Greek partners, we have to redefine the work to be done. We will not work in the field of profiling and support for rapid system modification. Esterel Technologies will take in charge the task on the behaviour of VC and removes Java code generation. "Vergil" the Ptolemy II GUI, will be use as generic user interface for integration of multi formalims as Kahn Processes networks, Array-OL,.. The activity on the public trial will be limited to ENEA activity.

There is still a delay in Italian submission : expected Q1 2002. An official Change Request and updated FPP is sent to ITEA.

During the second semester of 2002 we had three international meetings:

- TCC meeting, Eindhoven, September 19-21, 2001

- TCC meeting, Rome, ENEA, December 10, 2001

- PCC meeting , Villeneuve-Loubet, December 17, 2001

Project Cooperation Agreement (PCA) not signed, Project Management must be vigilant.

TESI

Progress report summary

The aim of TESI is to provide an open and trusted security software architecture together with "inter-operable and exchangeable" Internet security components entirely developed in the European Union.

The principal goal is to provide a commonly accepted and trusted 'de facto standard' development environment for Europe's security software industry that is not subject to controls and restrictions by the US National Security Agency (NSA) while maintaining full compatibility with any Internet application (Web, E-mail, VPN,...) and compliance with international standards (IETF,OpenGroup,...).

The TESI project started officially on 1 February 2000.

All French partners have their contract with the PA's signed, Belgian and Italian partners have the formal agreement of their PAs and are expecting signed contracts within a couple of months.

As stated in the previous report, a synchronization gap between the various funding has required the extension of the project until the end of 2002 in order for the Italian & Belgian partners to fully achieve their workplan.

Four (2 days) PCC meetings have taken place (Paris in September 2000, Tuscany in January 2001, Aix en Provence in June 2001, Roma in December 2001) and have showed a very good understanding and technical cooperation between the consortium's members.

To gain early recognition of the initiative from the European security actors, the dissemination actions have started early as initially planned. After the participation to the ISSE Barcelona Forum in September 2000 where a conference and a press release on the TESI project was presented (see www.eema.org/isse) with INTEL Corp. (originator of the CDSA specification used by the TESI core middleware) and the two conferences that where given to the OpenGroup April meeting in Berlin (over 80 individuals attending), agreements to re-use TESI components in other European projects have been achieved. These projects are :

  • the ITEA NETCARE project, which will use TESI developed components for the security layers of its Trial demo (health care environment) that should take place in July 2002.

  • the IST ICE-CAR and NASTEC projects, which are planning to integrate some TESI components in their works centered on the construction of an European wide PKI infrastructure.

These co-operations with other projects together with the successful open- sourcing of the TESI core middleware components on SourceForge have showed the interest for the European security industry players of the TESI approach and the consortium has decided to completed this dissemination by a major demonstration at ISSE 2002 in October in Paris where many TESI developed components are going to be publicly demonstrated.

Thanks to a very good understanding and close technical cooperation between the consortium members, many tasks have been successfully completed and the achieved technical progress can be summarized as follow:

  • WP1 : the TESI core middleware infrastructure is now completed and has been 'Open sourced' to the scientific & industry community (both on SourceForge and on the TESI WEB site).

- WP2 : Some important 'client' components are now available (software crypto CSP, smartcard CSP, SSL-Telnet and FTP components and time-stamping components). However the consortium has faced a huge technical complexity with the integration of TESI developed components in WindowsXX based PC. We have found that this technical complexity was created intentionally by the major (US) software editors (various incompatible security API's, lack of backward compatibility, 'strange' behaviour when Calling encryption services,, etc.) and that a deeply integrated & 'user friendly' security layer (with the OS and the major standard office applications) was outside of the budgeted time/ resources plan of this project.

- WP3 : on the 'server' side, IpSec-VPN and WEB SSL gateway components are completed and have been successfully trial tested. Beta version of Digital signature and Time Stamping components have also been made available according to the workplan. A beta version of the TESI administration & key management components has also been developed using a sophisticated technology that automatically generate security rules for devices (e.g. VPN, SSL server,, etc.) based on user-defined abstract security policies.

The remaining tasks (AES implementation, PKI integration, continuation of the Security and key management components) are taken into account with the development of the related components being planned in 2002.

After 18 months of activity 95,6 MY over the 163,4 MY planned have been worked out (60 %) and the project is scheduled to finish in December 2002.

<u>VIVIAN</u>

Progress report summary

Technical progress / results achieved

Following a successful intermediate project review in July, which attested to the first year's progress in VIVIAN and confirmed that the project objectives remain well on track, the VIVIAN project continued its technical activities on the specifications of the VIVIAN platform and VIVIAN services as well as on the development of a prototype of the VIVIAN platform based on OMG specification of wireless CORBA.

By the end of 2001 the implementation of the VIVIAN platform prototype was ready. This consists of a custom implementation of wireless CORBA for Bluetooth. At the same time, the VIVIAN architecture specification has shown steady progress. The original objective to base the system architecture on wireless CORBA was updated by recent technical and market evolution, which compelled the consideration of SOAP protocol in conjunction to CORBA. Finally, the specifications of VIVIAN services has started and 30% of the scheduled service specifications were ready by the end of 2001, while the full service specification is scheduled for April 2002.

Major dissemination activities

There are several VIVIAN-related publications from various members of the project consortium, which include deliverables and reports, article submissions, VIVIAN-related courses at academic institutes, presentations in public seminars, and other. All these can be found in the project public web pages (www-nrc.nokia.com/Vivian). In addition to this, VIVIAN has probed into the cooperation with the ROBOCOP project (ITEA 00001) which was initiated in the first semester of 2001. A joint VIVIAN-ROBOCOP workshop reserved only to members of both consortia took place on September 4, 2001 in Toulouse followed by a common working meeting on architectural issues on December 13, 2001 in Madrid. As a certification of the strong common ground in these two projects and in order to promote the results of the complementary work these projects are doing, VIVIAN and ROBOCOP decide to organize a common workshop open to public some time in the period August - October 2002. The details for the workshop will be settled in January 2002.

Managerial issues

After a first year where consortium stability was not the primary characteristic of the VIVIAN consortium (2 request for change in 10 months), the project composition is now stable. Consortium members remained very much in line with their scheduled participation to the project, both in terms of allocated effort and technical contributions. The project has now regular technical meetings every two months and PCC meetings every four months.

D.3   Call 3

AMBIENCE

Progress report summary

Technical progress / results achieved

This report covers the first semester of the AMBIENCE project. In this period, efforts have focused on joint scenario generation and requirement analyses for Context Aware Environments with all the partners, as planned. The generated application scenarios have been analysed in terms of user benefits, components and required system interactions, for the home- and office application domains. Draft versions of the resulting User Requirements document (D4.1) and the System Requirements document (D1.1) have been generated.

In addition to the plenary activities, progress has been achieved in the Work Packages:

• In WP1 short-range wireless radio network solutions have been researched, and progress is being made on developing the Zigbee protocol and standard. Overviews of QoS issues in LAN's, ad hoc routing protocols, IEEE 802.11 radio technology, and approaches for service advertisement and discovery (incl. Java/Jini, JXTA, ObjectWeb) have been produced.

• In WP2 a comprehensive assessment of tracking and positioning technologies and their suitability for indoor Ambient Intelligence applications has been made, including RF, acoustic and video location determination technologies. Initial experiments have been done.

• In WP3 three main themes have been defined. For the Personal Assistant, the specification and head design is in progress. For the Context Model, literature studies have been performed and an environment simulator has been designed. For Content Access and Interaction, studies on machine learning and multimedia browsing are in progress.

• In WP4 the partners have concentrated on the User Requirements deliverable. All partners paid special attention to the interaction modalities they want to employ for realising the natural interaction in ambient environments. Progress is also made on the pen-tracking topic.

Major dissemination activities

External:

• Philips on the ICT Congress, demonstration (Sept. 5-7, 2001, The Hague, Netherlands)

• Philips and Thales on the ITEA Symposium, poster (Oct. 10-12, 2001, Berlin, Germany)

• VTT on the Interactive Home Seminar (Dec. 12, 2001, Oulu, Finland)

Internal:

• All partners: AMBIENCE Project Start Up meeting, (July 3-4, 2001, Oulu, Finland)

• All partners: AMBIENCE internal Workshop #1, (Nov. 12-13, 2001, Kuurne, Belgium)

Managerial issues

The planned project organization has been fully implemented. The PMT met five times and the PCC has held its first meeting. All partners eventually signed the PCA, with some amendments to be discussed at the next PCC meeting. Various changes in the consortium have been handled, whereby most of the earlier withdrawals could be compensated for by attracting new partners. An additional partner for the speech recognition tasks is needed.

More problems were encountered in the funding approval processes. At the time of the PSU, funding was only clear in Austria, Finland and the Netherlands (partially). In the course of this first half year, the funding was approved in the Netherlands (full), France, Italy and the UK. Belgium and Greece are still pending, and efforts in Germany have stopped due to insufficient outlook. The funding uncertainties have caused some delays and phase shifts.

All Workpackages have organized themselves, resulting in WP workplans. The PMT has organized 2 well-attended and successful plenary workshops: the Project Start Up at the VTT site in Oulu (Fin), and a Domain Exploration Workshop at the Barco site in Kuurne (B).

CAFE

Progress report summary

Technical progress / results achieved

During this period the annotated Tables of Content of most deliverables are defined.

Major dissemination activities

During this period two workshops were organised:

  • Internal, the kick-off workshop in Veldhoven, September 4-6, 2001

  • International, the PFE-4 workshop in Bilbao, October 3-5, 2001

A video about the ESAPS project was produced and shown at several occasions.

Many task meetings have taken place.

Many people involved in CAFÉ have submitted papers and presentations to conferences and workshops in the field. The most important two are: the PFE-4, and the SPLC-2, in August in San Diego.

Managerial issues

Because of the funding problems at the University of Groningen we have decided to find another task leader for task 3.3.

There is a severe problem with funding in Italy. Therefore the Italian partners cannot spend the budget they estimated.

The leader of Work package 2 leaves Thales by January 1, 2002. Thales will provide a new work package leader.

The French consortium was reorganised, and a new partner, Softeam, is introduced.

DIGITAL CINEMA

Progress report summary

Technical progress / results achieved

After establishing the diagram of the digital cinema chain, the work has been divided among the consortium members with various tangible results already visible today.

Barco has developed a prototype of a digital cinema projector with an easy-to-use graphical user interface, a PC setup and diagnostics application and a flexible interface to automation systems. For alternative content a special video-processing interface has been prototyped for optional connection of video and graphics images.

CFC has set up a program to measure and quantify image quality issues from a mastering perspective. They have expanded their film to film grading software to include the specific requirements for digital cinema mastering, and have effectively mastered a substantial amount of test material for 35mm to digital comparisons.

EVS established a server-architecture to cover the needs of both the single screen theatre and multiplexes. A major effort was put on the creation of an MPEG-2 decoder suited to the digital cinema requirements. With a first prototype already being operational.

Octalis has presented a global architecture towards security and conditional access that effectively combines the flexibility of today's working practice with solid security. A first prototype has been developed for demonstration and the effort to integrate the software on the server has been started

Philips has made several evaluations of the watermarking algorithm trying to decrease visibility as well as hardware complexity and robustness. They are now working prototype in standard definition, and have started on a high definition version.

Sublime software has developed a Java-based application to create interactive value added services as well as a subtitle editor, compiler and graphical generator. Embedding in the image stream on the MPEG server has been tested, direct overlay in the projector is yet to be developed.

Major dissemination activities

Several partners have taken part at various public and private demonstrations to the cinema industry. We are also represented in standardization and pre-standardization groups such as SMPTE DC28, MPEG-4 digital cinema workgroup and the European Digital Cinema Forum EDCF). Here is a short list of major dissemination activities:

- Aug 12-16 : EVS presented white paper on Digital Cinema on ITEA (International Theater Equipment Association) annual conference in Germany.

- Sept 27 : Sublime Digital Cinema Demo in Helsinki Finland supported by EVS and Barco.

- Oct 10 : Start BREAK project demo for Digital Advertising cooperation of RMB, Kinepolis, EVS and Barco. Public showings lasted up to December at theatre 12 in Kinepolis Brussels.

- Oct 25 : AGE Inter-operability Public Demo of EVS with main MPEG-2 US competitors Grass Valley Group and AVICA.

- Oct : Philips presentation of white paper "A Watermarking Scheme For Digital Cinema" at ICIP in Thessaloniki Greece.

- Nov 26 : EDCF technical module with ITEA project presentation by CFC and participation of Octalis, EVS and Barco.

Managerial issues

Not yet signed PCA , major issue intellectual property rights in paragraph 7.

INRIA has not been able to obtain funding without the participation of a French industry partner. Inria has therefore left the project.

ICUNA has experienced some difficulties as a company and decided they needed to focus on their core business and withdrew out of the project

Kinoton is only making slow progress in their funding application in Germany

The University of Derby has some problems to complete the financial balance for their participation.

EAST-EEA

Progress report summary

Technical progress / results achieved

The aim of EAST-EEA is to enable in-vehicle electronic integration via the definition of an open archi-tecture to achieve hardware and software inter-operability for mostly distributed hardware. Being the first ITEA project for architectures in the automotive environment, EAST-EEA will substantially widen the range of ITEA domains.

The common starting date for the project work was set as 01.07.2001, and work in all active work pack-ages has started. First tangible results, however, are expected only in mid 2002.

Major dissemination activities

The project goals and concepts were presented at number of workshops and events: at the EUCAR EG-C meeting in Brussels on 17.10.2001, at the European Commission sponsored ADASE (Advanced Driver Assistance Systems in Europe) concertation meeting in Brussels on 25.10.2001, and at the ITEA Project Leader day in Brussels on 12.12.2001. Additionally, a poster has been presented on the EUCAR 2001 conference on 20-21.11.2001. Judging from the responses at the meetings, EAST-EEA is drawing substantial interest from the community.

Managerial issues

The project organisation and management structure (consisting of a Steering Committee (STC), a Steering Support Committee (STSC) and a project coordinator for day-to-day business) were put into effect at a meeting on 06.07.2001 in Stuttgart. The consortium technical kick-off meeting took place on 20.09.2001 in Paris. It resulted in a number of technical meetings for the coordination of the work between the partners and the work packages. Given the large number of partners active in EAST-EEA, this necessary harmonization effort caused a somewhat slower than expected start up of the technical work. Therefore, some delays for the first deliverables are envisaged.

The EAST-EEA funding status can be summarised as follows: The funding of the French and Swedish partners is assured. The Italian partners have a check point by their public authorities in mid 2002. The funding of the German partners is phased. While phase 1 funding (a third of the expected funding) is ending in 31st Jan. 2004, funding of phase 2 of the project is likely to be assured. Being integrated into the German phase 2, the partners AUDI AG, BMW AG and Technical University of Darmstadt will join the project.

The model Project Cooperation Agreement (PCA) was analysed and recommendations for the EAST-EEA specific PCA regarding background and foreground information were formulated. Subsequently, at an internal review meeting, the partners determined that these IPR issues will cause some re-definition and re-distribution of the work in and between the work packages, as well as an associated shifting of resources. Together with the introduction of the new partners and the phase 2 German budgets this will cause a major change request to ITEA. This change request is scheduled for March 2002, once the German funding is definitely assured and stable.

HOMENET2RUN

Progress report summary

Technical progress / results achieved

The goal of the HomeNet2Run (HN2R) project is to define and demonstrate the feasibility of an end-to-end network architecture that enables interactive information, communication and entertainment services via broadband access to the 'networked home'.

During this reporting period, much technical progress has been achieved. After a long and difficult process in WP1, an abstract architecture has been defined (deliverable D1.1) based on the analysis of user scenarios from the info-tainment, communication and home control domains.

Secondly two innovative overall demonstrators have been defined, additional to the project plan. These demonstrators provide the opportunity to validate the results of the project and to show the value of the technology and its potential for innovative applications to the outside world. The demonstrator architecture has been described in deliverable D1.3, with input from all partners. Due to the regular planned late arrival of the building blocks, an extension period may be needed to complete it.

Within the WP's many software stack layers, bridge specification document (D3.1) and inter-operability test plans have become available. Internal studies have been worked out as the foundation for future deliverables.

Major dissemination activities

HomeNet2Run was present on the ITEA symposium in Berlin with a poster session. Also three papers have been published. Presentations have been given on three congresses (i.e. Net@Home, HiperLAN2 Global Forum and IIR's Home Networking). An official liaison with HiperLAN2 Global forum has been established.

Several contributions have been submitted to standardisation groups such as DVB's (subgroups CPT, IPI, MHP, WIN), TV-Anytime, HAVi, ETSI BRAN, IEEE 802.11 (a and e) and 1394 Trade Association.

Managerial issues

On the managerial side of this project major issues have been solved during this reporting period. All partners have signed the Project Consortium Agreement.

On the funding side, the German PA's have approved the German proposal though with considerable budget reductions. At the end of December, only the Italian partners are still waiting on the final decision of the PA's.

The cooperation between the partners was good. Frequent meetings have been organized by all workpackages organized during this period. A well-visited plenary Technical Workshop was organized in Brussels in order to disseminate intermediate results and to solve interdependent workpackage issues. Due to the good experience, a new workshop will be planned in next period.

Due to the difficulty of some topics, and changed interest of some partners, some deliverables have been delayed. In particular, the D1.1 (+2Q) is later than originally planned due to technical and methodological problems. Consequently, the deliverable D1.2 will be delayed (+2Q).

Also a second Change Request, reflecting changes due to restrictions in national funding, strategic re-orientation and minor shifts of work between WP's, has been submitted to ITEA office.

Overall conclusion: the project is running well at full speed.

KLIMT

Progress report summary

Only one partner has been active in the period. All the others experienced delays in the funding of their national sub-projects.

This means that the main workplan has been delayed by six months, and that the work reported by the only active partner, I&IMS, will be further integrated in the main stream of the project.

Funding status.

The Spanish partners have submitted two sub-projects to their national authority, focusing on two different application domains, medical extranets (sub-project lead by I&IMS), and business intranets and extranets (sub-project lead by Meta4). The I&IMS submission has been accepted. Following financial negotiations with the Ministry, the Meta4 sub-project was rejected and will be re-submitted in February 2002, this time lead by B-kin.

The French partners have submitted a sub-project, for the development of a multimedia data processing infrastructure for information retrieval and knowledge support. This project has been validated technically, and is being submitted for financial approval in February. Setting up the financial and technical proposal required some reworking with the cooperation of the Ministry, and it explains the additional delay.

The Italian sub-project proposal has been submitted in December 2001, and first feedback is expected in March 2002.

Work progress.

The I&IMS sub-project has started working at the original schedule date, July 1st. Most of the others will be starting in March and the Italians will be joining in the following period.

So far, technical progress focused on user requirements for Knowledge Management in the health care domain and on technology assessments, mainly for language engineering, Business Intelligence and data mining.

Management of time frame discrepancies.

The purpose of the KLIMT project is to validate at the European wide level Intermediation architectures for distributed Knowledge Management. All partners will be involved in the specification, development and experimentation phases.

In order to achieve this goal, the consortium is organised in the following way:

Partners who take an early start first concentrate on the development, and improvement of domain specific tools (health care, business knowledge management), and on the evaluation of technology.

Starting in early 2002, the consortium will launch first specifications of the entire platform (common services, APIs, and infrastructure). All partners will participate, and their work load adapted, if required, to their funding status.

The partners who will be starting the later will focus on validation of the platform, by adding new tools (GUI, services,, etc.) implementing the KLIMT APIs, by providing scenarios and user feed back.

POLLENS

Progress report summary

Managerial issues

During the first six months of the project, several actions have been performed to setup the operational framework of POLLENS:

- Kickoff meeting (July 2001): organized and hosted by Alcatel focused on the global objectives of the project and the assessment of each partner's goals, interests and relevant contributions. No discrepancies with regard to the Full Project Proposals (FPP) were discovered. The Change Request n° 1 was formally accepted by the Consortium and the template for the Project Consortium Agreement (PCA) was distributed by Alcatel to the partners.

- First PCC/TCC (October 2001), organized and hosted by Alcatel. To the initiative of Alcatel the Consortium agreed to produce an additional internal report, named "Business Case". In it each partner would clearly state its interest and contributions to the POLLENS project, providing technical details and constraints, foreseen solutions but also licensing and Industrial Propriety Rights issues, if present.

- Second PCC/TCC (January 2002), hosted by Alcatel and Thales. The Business Case was validated during the session and proved to be a very useful tool, complementary to the more functional-oriented description of the FPP. The Consortium agreed on making it a "live" document, to be integrated and reviewed periodically, mainly on a six-months period. A change of representatives of Alcatel was notified to the Partners: Mr. Carlo DRAGO replaces Mr. François NEUMANN as Project Manager and Mrs. Nathalie CHARTON replaces Mr. Christophe DOITEAUX as Workpackage Leader for WP2. The Partners approved.

The next meetings will be the Third PCC/TCC, which will be held in Palermo at the end of May, and the first project Review which is scheduled for 13 June; the location (Paris) has still to be officially confirmed.

Technical issues

No major problems so far identified.

Alcatel delivered the reference platform architecture (D2.1) which has been approved by the Consortium; the relative demonstrator was also implemented (M2.1) and showed to the partners. Moreover Alcatel and 6WIND discussed and agreed on the platform architecture for the Programming Layer; technical and implementation aspects were also tackled and so far did not raise any issue.

A first draft of the overview of added-value transport services (D3.1) was delivered to the Consortium by Thales, with the contribution of all the Italian partners and will be finalized at the end of February. The deliverable was due January 2001 but this slight delay will not have a major impact on successive activity: the mapping of services on top of the reference architecture is progressing in parallel. Thales also prepared a demonstration for the POLLENS partners to show the first version of its Policy Manager and how Thales can manage QoS and Security in a provisioning way.

ROBOCOP

Progress report summary

This report presents the progress that has been achieved in the second half of 2001, covering the first six months of the ITEA project ROBOCOP. The project intends to definite component based software architecture for the middle ware layer of high volume embedded appliances (like cellular phones, personal digital assistants, internet and broadcast terminals (set top boxes), network gateways and digital television sets). The projects aims to solve a number of critical issues such as the enabling of software IP exchange, the support of (distributed) developments based on resource constrained, robust, reliable and manageable components in the ROBOCOP architecture.

The IC industry made a lot of progress in the design of Systems On Silicon. The purpose of the ROBOCOP project is to develop a similar approach for embedded software technology based on a component framework and models of software components, at different abstraction levels. This approach enables the (vendor independent) interchange of software components for the intended embedded application domain. Different abstraction levels will allow the interchange of components at multiple levels of the system integration process, each with different associated business models; high abstraction level components could be made available free of charge to allow the product manager to do a functional level simulation where only footprint and processor speed or power demand are exposed from the model. A system architect, on the other hand, would require a lower abstraction level component that also provides details on real time behaviour or resource manageability and would only be available under certain legal conditions (like an NDA).

These demands for inter-operability and exchangeability of the components in the framework require the definition of a well-defined framework architecture with open (published or standardised) interfaces. Next to these general framework concepts, there are a number of special interest areas that the project needs to support in order to make the approach feasible for the intended application domain of resource constrained time critical embedded software. These later special interest area include the applicability for both the stationary and nomadic platforms as well as industrial control systems, robust and reliable operation in real-time and over time (life-time), resource aware operation (for bandwidth, power, footprint and cpu/dsp use) and the enabling of component trading supporting distributed SW development and multi vendor operation.

The project was initiated by a two-day project start-up meeting. This workshop resulted in a detailed planning for the project and the initiation of the four parallel activities of the first workpackage (Overall framework architecture, Robustness and Reliability Operation, Stationary and Mobile platform diversification, IPR Trading and Abstract Component Views). During the reporting period all activities have had several individual and joint meetings next to a large exchange of information over the project reflectors including state-of-the-art and review of relevant technologies, preparation of techniques/technologies presentation/digests, literature survey, etc. All these efforts combined make it possible to guarantee that the technical choices and decisions are backed up as good as possible to arrive at a feasible solution. Next to the initial ROBOCOP workshop there have been two joint workshops with the VIVIAN project.

The final result of the first work package is available in a draft version from the contributions of the individual activities. The integrated and completed version of the ROBOCOP specification (based on the requirements study) will face some delay however due to (a large number of) changes in the consortium and a delayed start (due to local contracts) for some of the consortium partners. These changes and related change of plan and planning will be reported in the first change request of the project.

Appendix E: Detailed Project Overviews

E.1 Detailed status of projects

Here we bring together information about project starting dates, submission of Change Requests, and approval of Change Requests that result in new versions of FPPs.

Project-name	Current FPP #	Start date / End date	Date of subm. / approval	Summary of change request
Call 1				
Agent-works	(if99026c)	01-10-99 / 30-09-01	03-07-00 / 29-08-00	Restart as "Agentworks II"; change of consortium: three partners leaving, two partners becoming sub-contractors to AEGIS; change of workplan. Cooperation with Europa.
				To be withdrawn
Athos	(if99001c)	01-03-00 / 01-09-02	01-12-99 / 22-12-99	Change of consortium: German partners (IKV++ and University of Berlin) replaced by French partners (CNET and INPG/SIRAC)
	(if99001d)		26-07-00 / 06-09-00	Change of consortium; change of workplan: shifts in planning due to funding problems in France
	(if99001e)		27-09-01 / 23-11-01	Withdrawal of Bull Italy, manpower taken over by Italtel. Delay of end date with 6 months.
Autogo	Terminated	01-01-02	07-06-01 / 12-10-01	Major changes due to German funding problems and therefore withdrawal of major partners.
Beyond	(if99002b)	01-09-99 / 01-09-01	21-07-00 / 04-09-00	Change of consortium; change of workplan due to lack of funding in Germany.
	(if99002c)		01-02-01 / 13-02-01	Removal of part of WP 4 and realignment of work allocation due to withdrawal of German partners (funding problems)
Bric	(if99003b)	01-07-00 / 30-06-02	15-03-00 / 08-06-00	Change of consortium: withdrawal of German and Belgium partners due to lack of funding; withdrawal of Euritis (France) due to a fusion, new partner RAI (Italy)
	(if99003c)		24-07-00 / 28-09-00	Change of project coordinator: Thomson Broadcast replaces Philips France, which leaves the project. Change of workplan: re-focusing WP3 with new partners.
	(if99003d)		27-06-01 / 23-11-01	Withdrawal of France Telecom
CAAIM	(if99025a)			To be withdrawn
Cascade	(if99017a)	01-08-01 / 31-07-03	29-09-00 / 25-10-00	Change of consortium: new company names, new partners. Change of start date. Change of workplan and efforts
	(if99017b)		21-11-00 / 15-12-00	New partner; minor changes in detailed work plan and general goals
	(if99017c)		20-06-01 / 23-11-01	Withdrawal of SGT (sme), shift of time schedule with 8 months.
	(if99017d)		16-10-01 / 23-11-01	New partner: IRT (research inst., Germany).
	Terminated		31-12-01 / -	Stopped due to funding problems
Co-Var	(if99019d)	01-06-00 / 31-10-02	02-01-01 / 13-02-01	New partner AISoftw@re (Italy)
	(if99019e)		09-03-01 / 20-03-01	FLV Foundation VZW ceases to exist; changes in workplan, extension of project to 31st October 2002.
	No updated FPP		13-02-02 / -	Sealife Centre (Bel) and Merlin (UK) replaced by Expertisecentrum Ename. Withdrawal AISoftw@re

Project-name	Current FPP #	Start date / End date	Date of subm. / approval	Summary of change request
Dess	(if99012b)	01-10-99 / 31-12-01	26-09-00 / 15-12-00	Change in start date. Change in consortium
	(if99012c)		20-06-01 / 12-09-01	Change in effort (Phlips), in partner names and extension with three months.
Digital Head-End	(if99006)	01-07-99 / 30-06-01	01-12-99 / 22-12-99	Change of budget; change in organisation within Philips
	(if99006a)		05-01-01 / 13-02-01	Withdrawal of ETH Zurich; changes in company-names
ESAPS	(if99005d)	01-07-99 / 30-06-01	30-03-00 / 08-06-00	Change of consortium: JKU Linz removed from FPP, Ericsson as new partner; Change of workplan; change of project leader
	(if99005e)		19-03-01 / 07-05-01	New partner Ivorium in preparation of involvement in Café
Europa	(if99004b)	01-10-99 / 31-03-02	01-12-99 / 22-12-99	Change of consortium: withdrawal of Siemens and University of Paderborn due to lack of German funding
	(if99004c)		02-02-01 / 30-05-01	Withdrawal of GlobalSign and Universite de Louvain due to funding problems; extension of project with 6 months within budget.
PEPiTA	(if99007b)	01-09-99 / 31-12-01	29-03-00 / 08-06-00	Change of consortium: two new partners (Bantry Technologies (Ireland) and Charles University (Czech Rep.)) and two withdrawals due to lack of funding (GlobalSign (Belgium) and SSE (Ireland))
	(if99007c)		07-09-00 / 12-10-00	Change of workplan due to changes in consortium (CR1); change of name: Bull Soft becomes Evidian
	(if99007d)		28-05-01 / 13-06-01	New project leader, new partner (IDOOX, Czech), change in workplan.
	(if99007e)		28-09-01 / 23-11-01	Withdrawal of IDOOX
RTIPA	(if99011b)	01-10-99 / 31-12-01	30-01-01 / 20-03-01	Change of starting date (1-9-99); changes in workpackages; renaming partners
	(if99011b)		06-12-01 / 13-12-01	Withdrawal of a part of Thales: Thales Airborne Systems
Softec	(if99029_ update)	01-07-99 / 01-07-01	01-12-99 / 22-12-99	Change of consortium due to re-orientation ITEA Core Team; Change in work description, master milestones and deliverables
TASSC	(if99022e)	01-01-00 / 31-12-01	05-08-00 / 24-11-00	Changes in workplan, consortium and organisation due to merger of partners in Oberthur Card Systems and withdrawal of Bull Server; change of start date.
UmsdL	(if99028a)	01-09-00 / 30-10-02	06-08-01 / -	WIthdrawal of Alcatel (funding), University Linz. New partners PARVIS (sme) and Poly Milano. End date shifted 12 months.
VHE Middleware	(if99013b)	01-09-99 / 30-06-02	01-12-99 / 22-12-99	Change of consortium: withdrawal of Bull and Universite de Versailles due to lack of resources; Change of start date due to limited and delayed German funding
	(if99013c)		30-11-00 / 07-05-01	Due to German funding problems and Philips re-focusing change in workplan, start date (1-9-1999) and end date (30-6-2002)

Project-name	Current FPP #	Start date / End date	Date of subm. / approval	Summary of change request
Call 2				
@Terminals	(if99030b)	01-10-00 / 31-12-02	21-12-00 / 20-03-01	Restructuring of consortium (withdrawal of Siemens and Uni. Paderborn due to funding situation); withdrawal of DaimlerChrysler; Change in start date (1-10-00); change of workpackages; reduction of effort
	(if99030c)		02-08-01 / 12-10-01	Withdrawal of French partners due to lack of funding.
	(if99030d)		08-02-02 / -	Name changes, lower effort Philips DSL-L, change of Project and WP-1 and 2 leaders, minor workplan changes (WP-2, end date)
EKSTASI	(if99031)	Terminated	15-12-00 / 13-02-01	Terminated
Micado	Terminated		- / 12-10-01	Terminated
Netcare	(if99033b)	01-07-00 / 30-06-02	06-11-00 / 24-11-00	Change of project-leader: INDRA replaces Bull; change in consortium: withdrawal of Bull, new partner ETIAM; change in milestone-dates
	(if99033c)		29-06-01 / 12-10-01	Withdrawal of Portuguese partners and CENTIS, changes in workplan.
Sophocles	(if99038a)	01-09-00 / 31-08-03	03-07-01 / 12-10-01	Change of project leader, changes in consortium due to funding and company spin-offs.
TESI	(if99037b)	01-02-00 / 01-12-02	26-06-00 / 01-07-00	
	(if99037d)		26-02-01 / 07-05-01	Change in consortium: Philips Crypto replaced by UTIMACO (Belgium); change in end date (12-2002) and workplan
	(if99037e)		05-12-01 / -	Effort per year for the Italian partners adjusted according to figure transmitted to the Italian PA's
Vivian	(if99040a)	01-06-00 / 31-08-02	09-10-00 / 20-10-00	Change in consortium: partners in UK, Belgium, Greece and Italy left, Philips and ISOFT join. Change in effort.
	(if99040b)		26-06-01 / 12-09-01	Extension of project with three months, Palmware (F) replaces CIMEL@bs (F), Ericsson stops.

Project-name	Current FPP #	Start date / End date	Date of subm. / ap-proval	Summary of change request
Call 3				
Ambience	(if00003b)	01-07-01 / 30-06-03	17-12-00 / 12-09-01	Change in partner status: CWI (uni) becomes EPICTOID (SME); withdrawal of ENST Paris
	(if00003c)		25-06-01 / 10-10-01	Withdrawal of Swiss partners, Philips Speech and Thomson Signaal due to internal strategy changes of fundng difficulties. Reduction of results and efforts.
	(if00003d)		16-01-02 / -	Effort reductions (Barco, Italdesign), Withdrawal of German and Greek partners (funding problems), new French partners (ENST, Adersa, MEMOdata, Telisma)
Café	(if00004a)	01-07-01 / 30-06-03	14-06-01 / 12-10-01	Adaptation of partner set: some partners added, some re-moved, others changed into sub-contractors, adaptation of effort spend.
	(if00004b)		20-12-02 / -	Add. In French consortium: Softeam
Digital Cin-ema	(if00005a)	01-06-01 / 01-07-03	30-01-02 / -	Withdrawal of INRIA, ICUNA, addition of Philips research. Change in workplan. Shift of project with 5 months.
EAST-EEA	(if00009d)	01-06-01 / 31-11-03	29-06-01 / 12-10-01	Change in consortium, change in workplan: three months delay.
HomeNet 2 Run	(if00002a)	01-01-01 / 31-12-02	23-05-01 / 12-10-01	New project leader, new partners (Fraunhofer IIS-A ger) and CANON Research Center (fra)) and partners leaving (Light-ning Instr. (swi) and therefore CSEM (swi)) due to funding rules.
	(if00002b)		17-01-02 / -	Withdrawal Alcatel Bell, extensive changes in workplan (reduc-tions, corrections and shifts)
KLIMT	(if00008b)	01-07-01 / 30-06-03	30-06-01 / 12-10-01	New Spanish partners, Uni of Paris UMPC replaces Surf Tech., change of names (Thales).
Pollens	(if00011c)	01-07-01 / 30-06-03	29-06-01 / 12-10-01	Name changes, withdrawal of Alcatel Belgium, new partner 6Wind (French sme), Rome Uni replacing Poli. di Milano. Reduction in effort by Alcatel France.
Robocop	(if00001b)	01-07-01 / 30-06-03	11-02-02 / -	Withdrawal of Philips Specs Belgium, Alcatel, IMEC, KU Leu-ven, Thales telecom., Uni. de Nice. New partners FAGOR and IKERLAN (Spain).

Project-name	Current FPP #	Start date / End date	Date of subm. / ap-proval	Summary of change request
Call 4				
3DWorkbench	(if01012)	02-01-02 / 31-12-03	No CR	
Adanets	(if01001b)	01-03-02 / 31-03-04	11-02-02 / -	Withdrawal of German partners (no funding), new French partner (Uni Paris-LIP6), shift of end date (3 months)
Empress	(if01003a)	01-01-02 / 31-12-03	No CR	
HIISC	(if01005b)	01-01-02 / 31-12-03	10-02-02 / -	Shift in starting date (6 months) due to funding issue
Hyades	(if01010)	01-04-02 / 31-03-04	No CR	
MOOSE	(if01002)	01-03-02 / 29-02-04	No CR	
MyUI Every-where	(if01008a)	01-01-02 / 31-12-03	No CR	To be withdrawn
Prompt 2 Imple-men-tation	(if01009a)	01-01-02 / 31-12-03	No CR	
Proteus	(if01011a)	02-01-02 / 31-12-03	No CR	
Vaccat	(if01004a)	01-01-02 / 31-12-03	No CR	

Table 9. Detailed Status of Projects

E.2 Project reviews (overview)

The following table recapitulates past and future reviews of projects.

project	#	location	Dates	Country / External Rev.
Co-Var	1	Helsinki (Nokia)	July 11, 2001, PM	B / Lucas
Vivian	1	Helsinki	July 12, 2001, AM	Fin / Sihto
Netcare	1	Madrid (Indra)	September 10, 2001, PM	F/ Perez
Bric	1	Madrid	September 11, 2001, AM	F/ Guillemot
UmsdL	1	Madrid	September 11, 2001, PM	A / Pfaff
@Terminals	1	Berlin (DC)	October 9, 2001, AM	B/ Bilsen
Sophocles	1	Berlin	October 9, 2001, PM	F/ Terrier
Beyond	2	Kortrijk (Barco)	November 21, 2001, PM	B / Krekels
RTIPA	2	Paris (Thales)	November 22, 2001, PM	NL / Baeten
DESS	2	Kortrijk (Barco)	January 22, 2002, PM	D / Grote
Sophocles	1	Paris (Thales)	Feb 20, 2002, PM	F / Terrier
PEPiTA	2	Paris (Bull)	*February 21, 2002, AM*	F / Richard
TASSC	2	Paris (Slb)	February 21, 2002, PM	F / L. Blivet
HomeNet2-Run	1	Eindhoven (Philips)	March 21, 2002, AM	Nl / Prof. J. Biemond
Europa	2	Eindhoven	March 21, 2002, PM	I / Russo
Café	1	Milan	April 23 2002, AM	D / Prof. C. Lewerentz
Athos	2	Milan (Italtel)	April 23, 2002, PM	I / Prof. A. Roveri
Robocop	1	Eindhoven (Philips)	May 22, 2002, AM	Nl / Prof. G. Smit
Ambience	1	Eindhoven	May 22, 2002, PM	
Pollens	1	Paris (Alcatel ?)	June 13, 2002, PM	
Netcare	2	St. Malo ?	July 2, 2002, PM	F / Perez
BRIC	2	Rennes (Thomson)	July ?, 2002, AM	F / Guillemot
Vivian	2	Helsinki	Sept 4, 2002, AM	Fin / Sihto
VHE MW	2	Helsinki (Nokia)	Sept 4, 2002, PM	FIN / Berg
Sophocles	2	Paris (Thales)	Sept 24, 2002, PM	F / Terrier
EAST-EEA	1	Paris ?	Sept 25, 2002, PM	
Co-Var	2	Kortrijk (Barco)	October 16, 2002,AM	B / Lucas
Digital Cinema	1	Kortrijk	October 16, 2002, PM	
UmsdL	2	Toulouse	November 20, 2002, AM	A / Pfaff
KLIMT	1	Paris ?	December 10, 2002, AM	
TESI	2	Paris (Bull)	December 10, 2002, PM	I / Dott. R. Gagliardi
@Terminals	2	Eindhoven (Philips)	December 18, 2002, PM	B / Bilsen

Table 10. Project Reviews Overview

Glossary of Terms

3G	Third Generation Mobile
AIM	Application Integration and Middleware
API	Application Programming Interface
ASP	Application Service provider
B2B	Business-to-Business
B2C	Business-to-Consumer
BCI	BatiBus Club Association
Bluetooth	Wireless information network
BSG	ITEA Board Support Group
CCCB	Command, Control Communications in Buildings
CIC	CEBus Industry Council
CSS	Cascading Style Sheets
DES	Data Encryption Standard
DRM	Digital Rights Management
DVD	Digital Versatile Disc
EHS	European Home Systems
EHSA	European Home Systems Association
EIB	European Installation Bus
EIBA	European Installation Bus Association
EMS	Enhanced Message Service
ERA	European Research Area
FPP	Full Project Proposal
FTP	File Transfer Protocol
G2B	Government-to-Business
G2C	Government-to-Citizens
G2G	Government-to-Government
GPRS	General Packet Radio Service
GPS	Global Positioning System
GSM	Global System for Mobile communication
HA	Home Appliances
HDCP	High-Bandwith Content Protection
HEM	Home Entertainment and Multimedia
iDTV	interactive Digital TV
IEEE	Institute of Electrical & Electronics Engineers
ISP	Internet Service Provider
Java	Programming language for building reliable, scalable software in a networked environment
LAN	Local Area Network
MMS	Multimedia Messaging Service
MP3	MPEG 1 layer 3
NDA	Non-Disclosure Agreement
NIST	National Institute of Standards and Technology
OMA	Open Mobile Achitecture
P2P	Peer-to-peer file sharing
PCA	Project Cooperation Agreement
PCC	Project Coordination Committee
PDA	Personal Digital Assistant
PNO	Public Network Operators
QoS	Quality of Service
RDS	Remote Diagnostics System
RF	Radio Frequency
SDK	Software Development Kit
SDMI	Secure Digital Music Initiative
SLA	Service Level Agreement
SMS	Short Message Service
UMTS	Universal Mobile Telephone Service
VAR	Virtual Augmented Reality

VPN	Virtual Private Network
WAP	Wireless Access Protocol
WLAN	Wireless Local Area Network
XHTML	eXtended HyperText Markup Language
XML	eXtended markup Language

References

Note #	Reference
1	Jupiter Media Metrix, July 2001
2	Following the conclusions in eEurope Benchmarking Report 2002 (http://europa.eu.int/ information_society/eeurope/news_library/ new_documents/benchmarking/benchmarking_ en.doc) broadband access is steadily but slowly growing and it is still unevenly distributed throughout Europe.
3	Internet150, PricewaterhouseCoopers
4	End-User Perception of Bluetooth, Frost & Sullivan, 2001.
5	Wireless Access In Public Hotspots, Frost & Sullivan, 2001.
6	GSMworld (www.gsmworld.com), November 2001.
7	Video on Demand – Emergin in Europe, Frost & Sullivan 2001
8	Source: www.auctionwatch.com
9	Cutter consortium, e-Business: Trends, Strategies, and Technologies, 2000
10	Waters, R., FCC lifts spectrums caps on US wireless carriers, November 2001, www.ft.com
11	IDC, European Smart Card Market, 1998 – 2005, July 2000
12	Wheatman, V. & J. Pescatore, Plan to migrate to advanced encryption standard, briefing Gartner, November 2001
13	http://www.ida.gov.sg/
14	http://developmentgateway.com/
15	www.ft.com, June 2001
16	British Telecom, eGovernment: ready or not?, July 2000
17	www.ft.com, June 2001
18	Available on the ITEA website (www.itea-office.org)