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Avant - propos

CITIES est un projet qui touche à sa fin. Dans ce cas-ci, la fin marque la naissance d'une nouvelle ère d'applications en ligne. Le travail réalisé est un beau travail. C'est pourquoi le C.I.R.B., ainsi que ses partenaires européens, est fier de vous présenter les résultats du labeur fourni.

Sur base de ce projet, nous avons pu mettre au point différents types de services, basés sur des technologies très pointues. De la mise à disposition de documents administratifs en ligne, de la dématérialisation des tonnes de papier nécessaires entre deux ordres du jour des cabinets ministériels, au paiement via une « smart card » en ligne en passant par la signature électronique, le pas est aujourd'hui franchissable, pour vous, les administrations de la Région de Bruxelles-Capitale.

Grâce à la participation européenne et nationale dans les programmes tels qu'IRISnet, MIRTO et CITIES, le C.I.R.B. a eu l'opportunité de développer un environnement structurel construit sur des infrastructures technologiques puissantes et innovatrices. Cet environnement est le meilleur « show room » pour éveiller et sensibiliser le public comme le privé, et permettra le déploiement et l'intégration de nouveaux services basés sur la même composante générique, testée et éprouvée au sein de CITIES. Etant le Centre d'Informatique pour la Région Bruxelloise, le C.I.R.B. a construit l'expertise voulue et le savoir-faire en vue d'assurer la continuité de ces développements.

En outre, avec la mise en route du réseau de télécommunications à large bande, IRISnet, et destiné aux administrations régionales et locales se situant sur la Région de Bruxelles-Capitale, le C.I.R.B. a lancé un programme de développement d'applications télématiques utilisant ce réseau. Et plus encore, 70 kiosques ou autrement appelés « bornes IRISnet » vont être déployés sur le territoire régional pour offrir à tous les citoyens l'accès aux services télématiques des administrations.

Des instruments performants sont en effet disponibles dès aujourd'hui. Ils ont été testés et éprouvés. Ces applications permettront de simplifier les échanges entre secteur public lui-même et les citoyens.

Le pourquoi de CITIES est simple : donner de nouveaux outils aux administrations afin d'accroître leurs performances envers les citoyens. Et le comment ? En conjuguant les compétences technologiques développées au sein des villes européennes.

Le Centre Informatique pour la Région Bruxelloise est réellement un centre de services, à votre service. Nous mettons en effet tout en œuvre pour proposer ce qui se fait de mieux sur le marché mondial des nouvelles technologies.

Bonne lecture.

Hervé Feuillien   Robert Herzeele
Directeur Général   Directeur d'Administration

# 1.	HISTORIQUE

Dans un contexte international de plus en plus en synergie, les autorités publiques européennes sont pressées de se ré-inventer, en vue de s'adapter aux besoins et exigences d'une société moderne devant relever les défis du 21ème siècle. Cela signifie que les administrations doivent offrir un meilleur service à un moindre coût.

Les technologies de la Société de l'Information constituent une opportunité extraordinaire de poursuivre ce but, en augmentant la satisfaction des utilisateurs et en contribuant à l'efficacité des services.

Dans ce contexte, CITIES offre des solutions démontrables de réduction des distances entre les acteurs de la société et les pouvoirs publics. Les services à haute valeur ajoutée, orientés vers les citoyens (dans le domaine des relations avec les pouvoirs publics, la mobilité, les soins de santé) ou vers les entreprises (dans le domaine du télé-travail, du paiement électronique, etc.), intégrés dans un environnement uniforme et rendu accessible sur Internet par un point d'entrée commun : c'est la meilleure exploitation du projet CITIES, donnant aux organismes publics un instrument puissant répondant aux besoins internes, aux utilisateurs finaux et aux partenaires industriels.

Le but étant d'établir de nouveaux moyens de communications et d'interactions entre le citoyen, l'entreprise et l'administration.

Depuis quelques années, l'Union Européenne a entrepris des projets. Un premier rassemblement de la somme de ces études et expériences avait pris la forme de MIRTO. CITIES est la suite logique de l'avancement des recherches, et surtout des actions mises en œuvre.

## 1.1.	MIRTO

MIRTO (**M**ultimedia **I**nteraction with **R**egional and **T**ransnational **O**rganisations) était un programme approuvé en 1996 par l'Union Européenne, sous le volet « Télématique pour les administrations », et terminé en 1998. Ce projet visait à créer un nouveau moyen d'entrée en interaction des administrations publiques et des citoyens, des PME et des professionnels des zones métropolitaines européennes. Des applications télématiques et du multimédia y ont été développés en vue de la délivrance d'information à valeur ajoutée et de services de transactions.

Ces applications résultantes du projet sont visibles dans quatre sites expérimentaux : Madrid, Marseille, Rome et Bruxelles. Le C.I.R.B. a agit comme centre de services pour la démonstration en Région Bruxelloise.

Le projet MIRTO, aujourd'hui terminé, voit son prolongement consacré dans le projet CITIES.

1.2.   CITIES – Un nouvel espace de communication

Pour améliorer la qualité des services délivrés aux citoyens, distribuer et fournir un accès aisé et permanent à l'information et aux services.

La finalité de **CITIES** (**Ci**ties **T**elecommunications & **IntE**grated **S**ervices) est d'améliorer l'efficacité de la délivrance de l'information et de réduire la lourdeur et la complexité liées à la bureaucratie. Cela représente une occasion unique de fédérer et de coordonner diverses initiatives concernant la délivrance de services télématiques.

Dans le cadre de son programme de recherche et d'impulsion en matière télématique au profit des administrations publiques, l'Union Européenne a approuvé le projet CITIES, introduit par Alcatel et le C.I.R.B. pour la Région de Bruxelles – Capitale, et a débuté le 1er octobre 1998 pour une durée de 28 mois.

Ce projet de recherche et de démonstration est réalisé en collaboration avec les villes de Madrid, de Rome et de Marseille dont les partenaires industriels sont respectivement Utecity, Telemedia Engineering et Cegelec

CITIES veut créer, implémenter, tester et évaluer une plate-forme digitale globale, dans le but de soutenir et distribuer un large nombre de services télématiques, et préparer un énorme déploiement d'une offre télématique multilingue et multi-sectorielle venant des autorités publiques à destination des citoyens et/ou de groupes ciblés, utilisant les nouvelles technologies de l'information et de la communication de données (technologie Internet).

Les services offerts à Bruxelles sont destinés à rendre accessible les données administratives et les informations aux utilisateurs finaux, à travers des interfaces conviviales et des terminaux d'accès aisé. L'objectif principal est de démontrer l'utilité des nouveaux moyens de communication parmi les administrations, entre les administrations et les citoyens ou à l'attention de segments ciblés d'utilisateurs. CITIES vise également à mettre en œuvre les éléments-clés de la Société de l'Information.

CITIES couvre dès lors d'importantes actions visant à implanter :

- des moyens d'identification et de paiement, via une Smart Card
- des méthodes et des outils de commande, réservation et paiement de télé-services publics
- des méthodes et des outils de tracés d'itinéraires à destination du grand public à partir de systèmes d'informations géographiques
- des méthodes et outils de sécurisation, terminaux à destination du grand public pour des transactions entre les administrations et les citoyens
- la mise en communication avec des services d'information et d'urgence
- des normes d'échange et de présentation basées sur des standards TCP/IP, html, http…
- des outils et des services de communication, annuaire des services, annuaire des abonnés, gestion d'agendas, forums, applications de groupe, etc.

Le caractère multimédia des services considérés nécessite la mise en place de réseaux performants en matière de transports et d'interconnexion des réseaux. Pour rappel, le réseau de télécommunications IRISnet est déjà opérationnel en Région bruxelloise[1].

Les télé-services visés concernent notamment le domaine d'intervention des administrations : l'optimisation des services internes des pouvoirs locaux, l'enrichissement des services destinés aux citoyens dans le cadre des missions des services publics.

A Bruxelles, les thèmes d'application retenus dans le cadre du projet sont :

- **Le pôle transport** : transports publics en collaboration avec la STIB, informations au public et paiement par carte à puce. Mais également transports par voie d'eau avec le Port de Bruxelles : application interactive de mise à jour et consultation télématique d'une banque de données.

- **Le pôle information administrative** : statistiques régionales en collaboration avec le MRBC, application interactive de visualisation de statistiques régionales par Internet. De même que la consultation interactive via Internet de la banque de données des entreprises exportatrices bruxelloises, informations on-line sur les mesures d'appui et conditions de subsides à l'exportation et délivrance en ligne de formulaires de demande de subsides en collaboration avec le MRBC.

- **Le pôle santé** : application de transfert de messages entre les hôpitaux et les médecins en collaboration avec l'ULB et l'UCL, ainsi qu'une PME bruxelloise, MédiBRIDGE, et l'Observatoire de la Santé.

2. PARTENAIRES

2.1. Rome

Les différents secteurs de prédilection de Rome concernent les administrations publiques, les soins de santé et les transports. Par exemple, une carte d'identité électronique a été élaborée pour le citoyen, des informations en ligne sur les transports, des informations accessibles sur les lois … Et bien sûr, le paiement électronique dans certains cas, comme la réservation d'une place dans un hôpital, des informations visuelles sur une carte de la circulation ou encore de l'éducation à distance.

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[1] Cahier 16 du C.I.R.B. : IRISnet, un réseau pour la Région de Bruxelles – Capitale.

2.2. Marseille

Marseille implémente des applications axées vers l'éducation, les transports, le paiement électronique et l'administration. Pour cette ville, le but (en partie) est de faire une « révolution culturelle » dans les administrations, et d'offrir aux citoyens une meilleure qualité de service. En collaboration avec le site de la Guadeloupe, Marseille a testé de la télé-formation dans le cadre d'un programme d'éducation permanente. Une attention particulière est donnée au point de vue des utilisateurs : comment utiliser ces technologies ?

2.3. Madrid

Madrid a développé des applications spécifiques sur la circulation, les transports, les informations au public, sur Internet et la télévision digitale, et également des applications orientées vers les administrations pour les citoyens. Une partie à part concerne les transports d'urgence dans la cité. Et puis, le citoyen peut avoir des infos en ligne sur l'état des routes, de la circulation ou les parkings disponibles. Ici, également, emploi de cartes.

2.4. Bruxelles

CITIES a permis ici de grouper différents projets afin d'offrir au citoyen une vue d'ensemble des possibilités offertes par les applications télématiques. Un accès permanent, et pour tous, à l'information est primordial. Par exemple, l'utilisation de la cartographie digitale pour localiser les transports en commun ou les embouteillages, la délivrance de documents administratifs en ligne, le paiement électronique, l'imagerie médicale sont autant de développements à souligner.

3. OBJECTIFS

Améliorer la gestion interne des autorités publiques et étendre les services proposés. **Créer** une interface unifiée et attrayante pour les utilisateurs. **Utiliser** au mieux les ressources publiques au bénéfice de la communauté. **Favoriser** le développement économique et social local. **Construire** un service compatible avec l'intérêt général, sans compétition avec le secteur privé. **Etablir** une infrastructure générique de services multi – sectoriels pour les régions métropolitaines de Rome, Marseille, Madrid et Bruxelles.

Le système intégré de CITIES utilise une infrastructure télématique réalisée dans les règles de l'art, enrichie des apports technologiques des projets précédents[2]. Et ce afin de maximiser l'ergonomie des services fournis et leur valeur potentielle perçue par les utilisateurs. De plus, la mise au point de standards techniques et la validation des résultats dans la vie réelle et dans un environnement très demandeur ne peut qu'augmenter la pertinence du support comme des applications.

CITIES représente donc la somme des meilleurs éléments retenus au fil des projets, tant d'un point de vue technologique que de l'avis des utilisateurs. Car il est évident que la technologie, importante, est au service de l'utilisateur, c'est-à-dire du public.

Une identification correcte des priorités a permis, et c'est le cas au quotidien, de cibler les besoins et surtout d'améliorer l'impact des services télématiques mis en œuvre parmi une large audience de citoyens, de professionnels. Et cela en vue d'anticiper et de préparer la construction d'une Société européenne de l'Information.

Le multimédia associé à des applications télématiques de qualité donne des moyens modernes de réduire les distances entre les différents services publics ; avec comme résultat, une communication plus efficace et l'échange moins coûteux d'information.

Les Utilisateurs impliqués ou concernés sont principalement les citoyens, les entreprises de services, les organisations sans buts lucratifs, les organismes de soins de santé, les services d'urgence et les autorités publiques des villes – partenaires européennes (Rome, Madrid, Marseille et Bruxelles).

La technologie est basée sur une plate-forme intégrant divers outils d'information existants. Les points d'accès sont des terminaux self-services (kiosques multimédia), des stations de travail, des ordinateurs personnels ou simplement des télévisions adaptées. Les réseaux concernés sont les câbles de télédistribution, les MANs ou WANs à large bande basés sur le GSM, l'ISDN, l'ADSL ou la technologie ATM, le tout en utilisant des standards Internet. Les autres technologies utilisées sont le transfert d'image, le GIS et la télé-vidéo digitale.

Le développement de services multi-sectoriels et leur intégration sur une plate-forme unique est une caractéristique majeure.

Les bénéfices attendus :

- **pour les citoyens :** créer un nouvel espace d'information, améliorer la qualité des services, une information plus large et plus accessible avec un accès permanent à celle-ci, de même qu'aux services, et un accès aux informations communes européennes.
- **Pour les utilisateurs des applications :** le projet va permettre aux pouvoirs publics d'améliorer leur gestion interne et d'apporter à leur personnel un meilleur support de travail. La satisfaction des utilisateurs sera à mettre en corrélation avec une meilleure gestion de l'information.
- **Pour les industries européennes :** le développement d'une approche commune, par la méthodologie et la délivrance de services, va contribuer à la convergence

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[2] Pour citer quelques projets : MIRTO, REMEDES, CONCERT/STRADIVARIUS, ISAR, ATTACH, MAGICA, MIRTI, CAPITALS, COPYSMART, MIDAS-net…

des spécifications des administrations publiques, de même que des systèmes opérationnels vers une architecture télématique fédérative. Pour les entreprises industrielles, de services et les opérateurs de télécommunications, cette approche va permettre l'approbation des conditions optimales pour construire et délivrer des services télématiques aux citoyens.

Des systèmes multimédia et des applications télématiques sur mesure sont utilisés comme des solutions modernes et efficaces de réduction des distances entre les organes publics. Il en résulte que l'efficacité de la diffusion de l'information devrait croître, et que les coûts d'échanges inhérents à cette information devraient s'abaisser. Pour la Région bruxelloise, le C.I.R.B. est chargé de la préparation, de la vente et de la délivrance des services. Le C.I.R.B. agit donc en tant que Centre de délivrance d'information et de services.

Les applications intégrées communes aux villes partenaires

Secteur	Projet de support	Marseille, Madrid, Rome, Bruxelles
Administration	MIRTO	Services télématiques aux citoyens : Plate-forme de délivrance de services, modèle de services économiques aux compagnies, paiement en ligne, échanges entre administrations, informations aux citoyens.
Transport	CONCERT/ STRADIVARIUS	Paiement en ligne, Smart card., Electronic purse, informations aux citoyens.
Santé	REMEDES	Services télématiques à la profession Médicale et aux citoyens.
Education	MIDAS	Services télématiques aux citoyens et SMEs, démonstration, sensibilisation et éveil au multimédia.

Contribution d'autres projets

Tel. Engineering	MIRTI	Télé-travail et formation à distance.
Urbain/rural	ATTACH	Informations aux citoyens via kiosques
Information	MAGICA	Services télématiques aux SMEs
Transport	CAPITALS	Gestion des transports et informations
Programme ESPRIT	COPYSMART	Identification, authentification, confidentialité, intégrité, gestion de clé, et droits de propriété.
INFO 2000	MIDAS	Services multimédias et information

4. PRINCIPES

L'identification, la sécurité et le paiement en ligne sont basés sur la Smart card standardisée. Les applications tournent via une interface agréable, et orientée multimédia pour délivrer des informations aux citoyens. Des terminaux conviviaux et pratiques sont installés dans des endroits publics (tels les stations de métro bruxellois) afin de délivrer des services télématiques aux citoyens, et la présentation standard est principalement basée sur l'http et l'html. L'infrastructure technique utilisée pour supporter ces terminaux est un réseau à large bande urbain (ISDN, ATM et standards TCP/IP). A Bruxelles, le réseau de télécommunications, nommé IRISnet, permet de porter ce type d'applications, entre autres bienfaits pour les administrations publiques bruxelloises et pour les citoyens. Ce support permet bien entendu d'avoir des outils de communication performants tels la vidéo-conférence, la dématérialisation de documents administratifs, l'interconnexion en LAN...

Le projet CITIES a défini une **I**nfrastructure **C**ommune de **D**élivrance de **S**ervices (**CSDI**), inspirée par un concept innovateur d'intégration d'applications. Rome, Bruxelles, Marseille et Madrid sont les sites expérimentaux où les centres de services utilisant la CSDI sont mis au point. Et ce dans le but d'offrir des informations intégrées à haute valeur ajoutée aux citoyens, entreprises et organisations professionnelles des régions métropolitaines européennes. Quatre prototypes de « plate-forme » (CSDI) ont été produites et délivrées, intégrant déjà un certain nombre de services rendus opérationnels par les centres de services.

Certaines obligations ont du être suivies par les partenaires, notamment au niveau des langues et des technologies utilisées.

La définition et les spécifications d'une CSDI a été clairement définie, et des prototypes basés sur cette architecture particulière de plate-forme ont été implémentés sur chaque site CITIES. Le haut niveau de design, basé sur les nouveaux paradigmes d'application et d'intégration de services, de même que les technologies innovatrices émergentes (Internet, télévision digitale, GSM) ont été adoptées dans la plate-forme.

L'architecture générale de l'infrastructure commune, basée sur des standards ouverts, permet l'interopérabilité et l'intégration d'applications, et ce afin d'identifier les composants génériques composant cette architecture. Ces composants sont les modules fondamentaux chargés de répondre à la délivrance de services (module web, module de base de données, module de sécurité, module de paiement, etc.) et sont communes à toutes les implémentations réalisées sur la plate-forme de chaque site. Plus encore, en vue de remplir les considérations locales, d'autres composants ont été identifiés, mais sont optionnels. Ces composants ont été inclus dans les spécifications de la CSDI pour accentuer la souplesse du système et l'enrichir d'apports par chaque site.

En parallèle à la définition de la plate-forme CSDI et l'implémentation des prototypes, les services d'applications ont été intégrés sur chaque site. Services qui doivent répondre aux besoins identifiés préalablement des utilisateurs, et qui ont été soigneusement analysés en terme d'interopérabilité mutuelle et de spécifications inter-communicatives.

The major added values achieved in this period consist of:

a) the definition and reinforcement of user requirements, resulting from a strict co-operation between PA partners and industrial partners and enabling to add value to the industrial understanding of the future needs at a cross European level;

b) the identification of a set of sophisticated and innovative application services, tailored on the needs of Public Administration and their users (i.e. Citizens, SMEs, etc.);

c) the specification of a Common Service Delivery Infrastructure satisfying the CITIES user requirements. The CSDI is an application platform that enables easy development, controlled execution and extended monitoring of telematics services. It is therefore an integrated solution oriented to build-up and to manage Information and Services Centres;

d) the integration, into the common environment provided by the CSDI, of the results of the successful European project MIRTO, REMEDES and CAPITALS in the fields of Public Administrations, Health Care and Transport.

Project Management Survey

The current Project manager became involved in the CITIES project just after three months from the official starting date (Oct. '98 the 1st)even if she was involved in the project activities since the beginning. This was due to an internal re-organisation of the Municipality of Rome.

The potential of the CITIES platform to assist administrations in contributing to the objectives of the Telematics Application Programme is a key point, considering that the consortium has shown a vision and a strategy on how to take existing technology and build on it to address real needs of the citizen in his/her relationship with public administrations.

5.   RESULTATS

6.   EXPLOITATION

Foreword

CITIES is a project coming to his end. In this case, the end is like the birth of a new era of online applications. The work done is an excellent one. This is why the C.I.R.B., with its Europeans partners, is proud to present you the results. With this project, we have realised different kinds of services, based on high technologies. From on line administrative documents, the elimination of thousand kilos paper needed in a council, to payment on line via a smart card through a electronic signature, the step is today possible, for you, public authorities from the Region of Brussels - Capitale.

Thanks to the participation in European and national TAP-Programs (MIRTO and CITIES projects, IRISnet, ...), CIRB has had the opportunity to set up a valuable demonstration environment built on powerful infrastructures and innovative technologies. This environment will be the best "show room" to create awareness towards public and private content and service providers and to create awareness towards deployment and integration of new services based on the same generic components developed, tested and demonstrated within CITIES. As the Centre for Informatics of the Brussels Region, CIRB has built the needed expertise and know-how in order to assure the sustainability of its developments.

After the two regional calls for proposals launched by C.I.R.B. to select applications in the IRISnet and the MIRTO AND CITIES projects, C.I.R.B. has been charged by the Government of the Brussels Region to be responsible for the recognition at the regional level of the electronic signature and to accredit the regional and communal office employees having the electronic signature within the framework of the federal law.

Additionally, within the framework of its mission for the local and regional authorities and in the context of the installation of one wideband network in Brussels Region for all the Public bodies within the Region, the Government of the Brussels Region decided to entrust to the C.I.R.B. the launching of a program to create new telematics projects using this wideband network. Furthermore, the C.I.R.B. is charged to deploy over 70 kiosks in the Brussels Region in order to offer to all the citizens the access to telematics services related to the regional and local administration.

The C.I.R.B. can thus facilitate coherence, guarantee the continuity of the main initiatives and benefit from the support of the Federal Government and the European Union. We shall thus see appear and put together all the initiatives and energy needed to face up to a major challenge for the Brussels-Capital Region.

Advanced tools are in fact available since today. There have been carefully tested. These applications will simplify the exchanges between public sector and citizens. The reason why such a project is simple : to give some new tools to administrations in order to improve their performance to the citizens. And the how ? By putting together the technology competences developed in the hart of Europeans cities.
Have a nice read.

Hervé Feuillien   Robert Herzeele
Managing Director   Administration Director

1.   HISTORY

In a more and more synergetic international scenario, the European Public Authorities are urged to reinvent themselves, in order to adapt themselves to the needs and requirements of a modern society coping with the challenges of the 21st century. This means administrations that provide citizens with better services at lower cost.

The technologies of the Information Society constitute an extraordinary opportunity to pursue this end, enabling to quickly attain higher user satisfaction and to contribute to the enhancement of the SME's efficiency and competitiveness.

In this context, **CITIES** provides demonstrable solutions to reduce the distance between the society actors and the PAs. High added-value services oriented to citizens (in the domains of the relationships with the PA, mobility, health care) or to SMEs (in the domains of telework, electronic payment, etc.), integrated in a uniform environment and made available on the Internet through a common access point: this is the best exploitation of the CITIES project, providing PAs with a powerful tool to meet internal requirements, end-users with immediate benefits and industrial partners with the possibility to exploit their products and tune market penetration strategies.

The aim is to establish new ways of communication and interaction between the citizen, the enterprise and the administration. CITIES is significant of the improvement and the synergy between the different realizations in the European countries.

Since a few years, the European Union encourages a lot of projects in telematic for administrations. A first wedding of these studies and experiments has take the form of MIRTO. CITIES is the logical suite of research, and above all of the actions done.

1.1.   MIRTO

The **MIRTO** programme (**M**ultimedia **I**nteraction with **R**egional and **T**ransnational **O**rganisations) has been cofinanced by DGXIII of the European Commission in the framework of the "Telematics for Administrations" programme. The cities involved in the project are Rome, Madrid, Marseille and Brussels.

With the main objective being to bring public departments closer to the people, MIRTO aims to make user-friendly, high added-value public departments available to people, companies and other public bodies through telematics.

Access to the services will be either from a computer connected to the Internet, or from one of the information terminals installed within the Region.

Today, the MIRTO project is finish. And has found his continuity within the CITIES project.

1.2. CITIES – A new information space

Leading to an improved quality of services, a wider range of easily-accessible information, a permanent access to information and services.

CITIES (**C**ities **T**elecommunications & **I**nt**E**grated **S**ervices) contributes to enhance the relationship between PAs and Citizens. It is expected to increase the efficiency of information delivery and to reduce the heaviness and the complexity of bureaucracy. CITIES represents a key-opportunity to federate and co-ordinate various initiatives and to build a generic infrastructure and a generic implementation model in order to stimulate the delivery of new telematic services.

The European Union, in its research telematic programme for public bodies, has approved the CITIES project, that has been started on October 1998. This research project is realised with the collaboration of Madrid, Rome, Marseille and Brussels, and with the respectively partners of Utecity, Telemedia Engineering, Cegelec and Alcatel. For the Brussels Region, packaging, marketing, and delivery of the services is handled by C.I.R.B. as Information and Services Brokering Companies.

The CITIES project intends to design, implement, test and evaluate a global and co-operative digital platform in order to support and distribute a wide range of telematics services and to prepare a large-scale deployment of a multilingual and multi-sectorial telematics offering from Public Authorities.

The services offered in Brussels are designed to make the administrative data and information available to the end-user, through user friendly interfaces and easy-to-access terminals. The main objective being to demonstrate the new ways of communication among administrations and between administrations and Citizens or targeted segments of users and to develop the Information Society features.

CITIES covers some important actions like :

- ways to identification and payment via a smart card

- methods and tools of command, payment of public teleservices

- methods and tools of geographical information systems

- methods and tools of security; public terminals for transactions between administrations and citizens

- a efficient way to communicate with emergency services

- standards of exchange based on TCP/IP, html, http…

- tools and communication services, agendas, forums, group application.

Multimedia systems and carefully tailored telematic applications are expected to provide means to reduce the distance between various public bodies; as a result, communication efficiency should increase and information exchange costs decrease. The building of broadband networks, based on ISDN and/or ATM switching backbone technologies, in the four digital sites, will allow to experiment and to prepare a widespread deployment of public telematic services in other Cities of the European Union[3].

In Brussels, the applications are about :

- **Transport :** General Information database from STIB (Society of Transport) on public transport, timetables and tariffs, with payment via smart card. But also maritime transport with Brussels Harbour Information - Services to the attention of users involved in the maritime transport around the Brussels Harbour.

- **Administrative information :** Statistics Service of the Brussels Regional Administration. Currently several «paper» reports are produced by the Region of Brussels. The on-line availability of this information will be very beneficial and the possibility will be offered to obtain it as thematic maps. The 'export directory database' describes all the companies of the Brussels Region wishing to export or already exporting goods and services. Available only as a book so far, the database will be connected to the platform and will offer functionalities such as a search engine, an e-mail connection and links to the existing related Web Sites.

- **Health care :** Medical information.
  Services designed to the use of Health care professionals.

2.   PARTNERS

2.1.   Rome

The different sectors concerned by CITIES in Rome are the public administration, the health care and the transport. For example, an electronic I.D. card for the citizen, information about transport, information about laws… Of course, the electronic payment is possible, like for an hospital reservation, information point for circulation and public transports with a digital map of the city, education in distance.

[3] See the boo

2.2. Marseille

Marseille is implementing applications in education, transports, electronic payment and administration. For this city, the aim (of one part of this) is to make a "cultural revolution" inside the administrations et to offer to citizens a better quality of services. In collaboration of the Guadeloupe region, Marseille has tested a tele-formation in permanent education. The point there is also to take care of the user point of view : how to use these new applications ? These horrible new technologies… So, Marseille put together 3 groups and also "test" them : municipality, developers and users.

Madrid int..orts, public info..hore administrat..the emergency............... the city. About the traffic autoway, the citizen will have the access on information updated about the traffic jam, the facilities over the parkings and the public works. A digital map of Madrid will also be on line, principally via the Internet but also digital television.

2.4. Brussels

As said during all this booklet, CITIES was for Brussels the opportinuy to group different important projects, and to offer to the citizens a global aspect of the use of applications in telecommunication, telematic and in computer engineering in general. A permanent access to the information is major, like : digital cartography, online info about public transports, online administrative papers, electronic signature, online and secure payment, health care and medical video are also important application.

3.   OBJECTIVES

The main objectives of CITIES are to:

- *Improve* *the internal processes of the participating Public Authorities (PAs) and extend the range of services they offer achieving economies of scale and of scope;*

- *Create* *a unified and user-friendly interface to the PAs for the end users;*

- ***Make*** *better use of Public resources to benefit the whole Community and improve accessibility of quality health care;*

- ***Favour*** *local social and economic development;*

- ***Build*** *a service delivery platform compatible with the development of private telematics services (following the principle of general interest and non competition with private sector).*

The resulting platform will integrate methodologies, tools, advanced modules, applications and products already available as a result of the different sectorial projects[4] as Generic Components (GCs) and will complete the existing infrastructures (networks, information systems, ...). These components address the different levels which need to be handled in order to set up an efficient and usable service delivery organisation based on the collaboration.

CITIES represents the total of the best elements used before. A correct identification of key priorities for targeted segments of users will increase substantially the ipacts of telematics services among the broader audience of citizens and professionals.

The telematic services already available and the integrated services planned in CITIES will generate more and more demand and expectations from users. The potential of dissemination of existing services and development of new ones is almost unlimited and will follow the generalisation of the Information Society Culture and the economical constraints.

The users involved are principally Citizens, SMEs, Content and Service Providers, non-profit organisations, Health care professionals, emergency services and PAs, in the European Cities of Rome, Madrid and Marseilles (the Guadeloupe Island is associated to the Marseilles Platform), and in the Brussels Region.

The technology approach is based on a Service Delivery platform aiming at the integration of existing information systems. Access points are self-service terminals (multimedia kiosks), staffed workstations and home PC's or simply suitably adapted TVs. The Networks involved are TV cable Networks, broadband MANs and WANs based on GSM, ISDN, ADSL or ATM technologies and using Internet standards. Others technologies used are: imaging, GIS, video digital TV.

Expected benefits :

- ➢ **for the citizen :** to create a new information space, leading to an improved quality of services, a wider range of easily-accessible information, a permanent access to information and services, an access to EU common information.

- ➢ **for the users of the applications :** the project will allow PAs to improve their internal operations and to address the user needs increasing effectiveness and lowering capital investment. User satisfaction will increase as a result of

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[4] Like for exemple : MIRTO, REMEDES, CONCERT/STRADIVARIUS, ISAR, ATTACH, MAGICA, MIRTI, CAPITALS, COPYSMART, MIDAS-net…

a better management of information flows and a better value for money, due to increased efficiency and affordable tariffs, based on commercially viable provision. The Users will also benefit from cross sectorial and multilingual applications.

➢ **for the European Industries :** the development of common approach, methodologies and service delivery architecture, contributes to the convergence of the Public Administrations specifications and operational systems towards a federative telematics architecture. For industrial enterprises, service and telecommunication operators, this approach will enable the assessment and the technical and business validation of the optimal conditions to build and deliver telematics services for Citizens.

Multimedia systems and carefully tailored telematics applications are expected to provide modern and effective means to reduce the distance between various public bodies; as a result, communication efficiency should increase and information exchange costs to decrease. For the Brussels Region, the C.I.R.B. is in charge of the preparation, the sell and the delivery of services.

The common integrate applications of the cities concerned are :

Sector	Support Project	Marseille, Madrid, Rome, Brussels
Administration	MIRTO	Telematic services to citizens : delivery platform, payment on line, exchange between administrations, information
Transport	CONCERT/ STRADIVARIUS	Payment on line, smart card, info
Health Care	REMEDES	Telematic services to medecine and Citizens
Education	MIDAS	Telematic services to citizens, Demonstration, and awake to multimedia
Other		
Engineering	MIRTI	Telework and and education at distance
Urban/rural	ATTACH	Information to citizens via kiosks
Information	MAGICA	Telematics services to SMEs
Transport	CAPITALS	Informations about the transports
ESPRIT Prog.	COPYSMART	Indentification, authentification, security
INFO 2000	MIDAS	Multimedia services and informations

4. PRINCIPLES

The project will accelerate the construction of the Global Information Society. It will raise awareness for Trans-European information exchange. It will also provide an opportunity to test a Trans-European user-friendly access to a wide range of information. It will also reinforce the technical, industrial and administrative co-operation and harmonisation among the four participating regions and PAs.

THE CITIES project has defined a common Service Delivery Infrastructure (CSDI), inspired by the innovative concept of application integration. Rome, Brussels, Madrid and Marseilles are the experimental sites where Service Centres employing the CSDI are being set up, in order to offer added-value integrated information to citizens, SMEs and Professional Organisations of the European metropolitan areas. Four prototypes of the CSDI were produced and delivered in the reporting period, already integrating a significant set of services made available by heterogeneous Content and Service Providers.

In the reporting period, the CITIES Consortium successfully reached the scheduled milestones, with some minor delays. The synergetic way the users, industrial partners and content providers have been co-operating and the pragmatism showed while coping with the typical multinational and multilingual constraints, allowed the consortium to achieve the results needed to make a major step forward in providing improved services to the citizens in line with the 4th and 5th Framework Programme

The technical activities of CITIES project were focused around the definition and specification of the Common Service Delivery Infrastructure (CSDI) and to the implementation of prototypes based on the CSDI architecture at the four CITIES sites (Rome, Marseilles, Madrid and Brussels). The high level design, based on the new paradigm of application and service integration, and the innovative and emerging technologies adopted for the CSDI (Internet, Digital-TV, GSM) provided the Public Authorities with a service delivery framework capable to meet requirements.

The CSDI general architecture, based on open standards, so as to enhance interoperability and application integration, has been detailed identifying several Generic Components. These components are the fundamental modules in charge of the different issues related to the delivery of services (web module, DB module, security module, payment module etc.) and are common to all the implementations of the CSDI in the four sites. Moreover, in order to fulfil local requirements and needs, other components have been identified as optional. These components have been included in CSDI specification in order to stress on one hand the modularity of the CSDI and on the other hand the cross-fertilisation resulting from a possible future use of these modules by all the four sites.

In parallel to the CSDI platform definition and prototypal implementation on the four sites, the Application Services to be integrated on each site, matching the previously identified reinforced user needs, have been carefully analysed in terms of mutual interoperability and intercommunication specifications.

Added Values Survey
The major added values achieved in this period consist of:

e)   the definition and reinforcement of user requirements, resulting from a strict co-operation between PA partners and industrial partners and enabling

to add value to the industrial understanding of the future needs at a cross European level;

f) the identification of a set of sophisticated and innovative application services, tailored on the needs of Public Administration and their users (i.e. Citizens, SMEs, etc.);

g) the specification of a Common Service Delivery Infrastructure satisfying the CITIES user requirements. The CSDI is an application platform that enables easy development, controlled execution and extended monitoring of telematics services. It is therefore an integrated solution oriented to build-up and to manage Information and Services Centres;

h) the integration, into the common environment provided by the CSDI, of the results of the successful European project MIRTO, REMEDES and CAPITALS in the fields of Public Administrations, Health Care and Transport.

Project Management Survey

The current Project manager became involved in the CITIES project just after three months from the official starting date (Oct. '98 the 1st)even if she was involved in the project activities since the beginning. This was due to an internal re-organisation of the Municipality of Rome.

The potential of the CITIES platform to assist administrations in contributing to the objectives of the Telematics Application Programme is a key point, considering that the consortium has shown a vision and a strategy on how to take existing technology and build on it to address real needs of the citizen in his/her relationship with public administrations.

5. RESULTS

6. EXPLOITATION

The CITIES Exploitation plan - of which a first version has been delivered at this stage, to be revised and reinforced in the final phase of the project – takes advantage of the descriptions of the Internet and Information Technology scenario outlined by recently published market surveys. The main assumptions/predictions contained in these surveys can be summarised as follows:

Internet-compatible standard is favoured over those of the telephony and cable TV;

the Internet is accelerating the rate of change in technology by an order of magnitude;

the Internet is evolving from a passive publishing medium to an interactive applications environment;

Internet standards and architectures will eventually replace proprietary alternatives within enterprises;

the Internet is rapidly being embraced by the corporate world, for both internal and external use;

Europe is rapidly recovering the delay with the United States about the provision of services over the Internet, due to the benefits of well-defined institutional strategies and broader and broader consumer acceptance;

the Internet is rapidly maturing into a commercially exploytable medium and the pressure for every business to "get on-line" will become irresistible in the next few years;

New legislative initiatives, encouraging the adoption of strong encryption, are boosting users' confidence in e-commerce;

The development of innovative access strategies, led by free Internet offering, also appears to be eroding the importance of Europe's high telephone connection charges as a barrier to *e-business*;

the Internet gives SMEs the opportunity to grow with unequalled rapidity, also thanks to the new paradigm of "direct marketing".

Within this scenario the CITIES consortium will evaluate the exploitable results and the related business plan, as it can be identified at this stage of the project.

In this general framework, characterised by an Internet-driven spreading of Information Technology, the exigence is arising to transform steady web sites into dynamic operational portals, whose effective usability is determined by a series of key-factors: accurate choice of look, design, ease of navigability, reliability of the content and technical performance. Greater and greater importance is also gaining to the innovated concept of application integration, which is rapidly emerging as a new paradigm.

Within this scenario, the CITIES consortium has been playing the role of front-runner, having clearly identified from the very beginning the importance of providing end users (citizens, SME's) with a common point of access (Common Service Delivery Infrastructure, CSDI) to integrated heterogeneous information, coming from different Service and Content Providers.
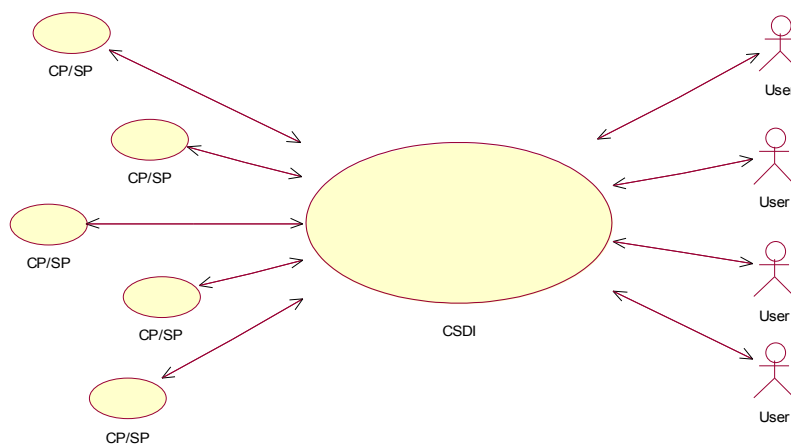
Brussels Demonstrator

The Brussels Demonstrator is composed of Telematic Services and Tools & Applications for service delivery through a telematic platform. It integrates services covering domains such as public transport, health care, education and culture, statistics and enterprise information.

The main objective of the Brussels Demonstrator is to make the administrative data and information available to the end-user, through user friendly interfaces and easy-to-access terminals. To reach this objective, the Brussels Demonstrator required to design, to implement, to test and to evaluate a global and co-operative digital platform in order to support and distribute a wide range of telematics services and to prepare a large-scale deployment of a multilingual and multisectorial telematics offering from Public Authorities.

A principal task was to identify existing applications capitalising on the activities already done for the Generic Components and the MIRTO platform.

The basic system architecture is presented in the figure bellow. The user acesses the telematic services delivered by the Content Provider (CP) or by the Service Provider (SP) through a Common Services Delivery Infrastructure (CSDI).
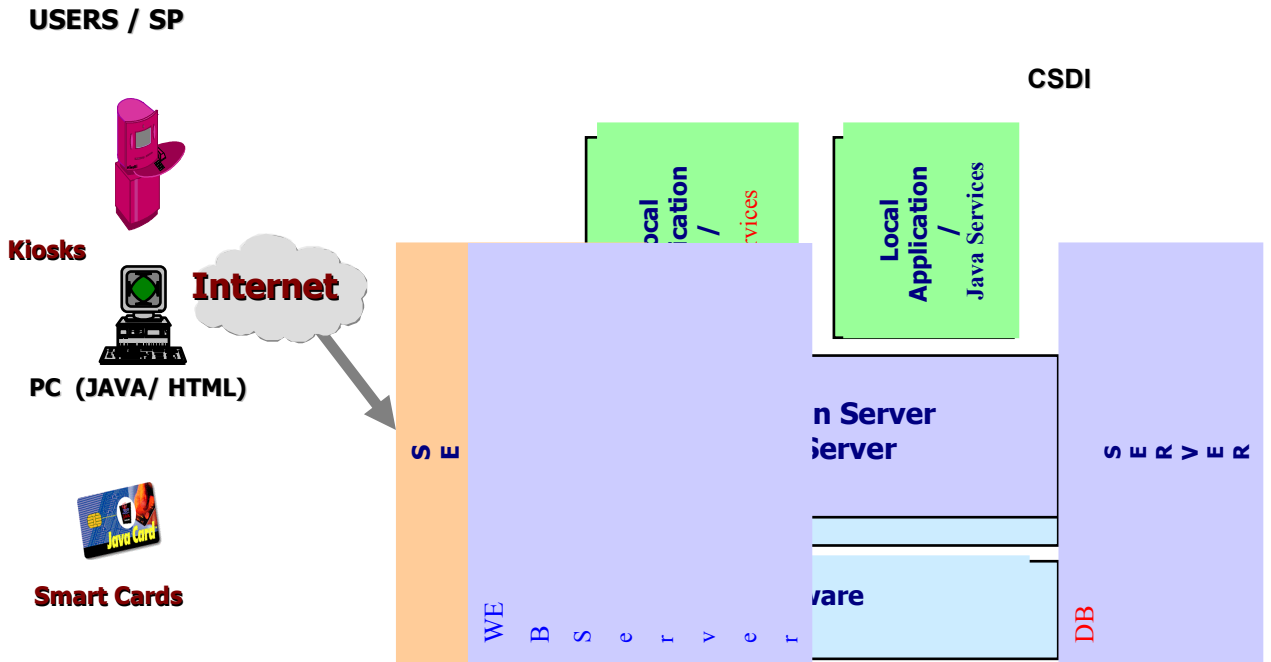

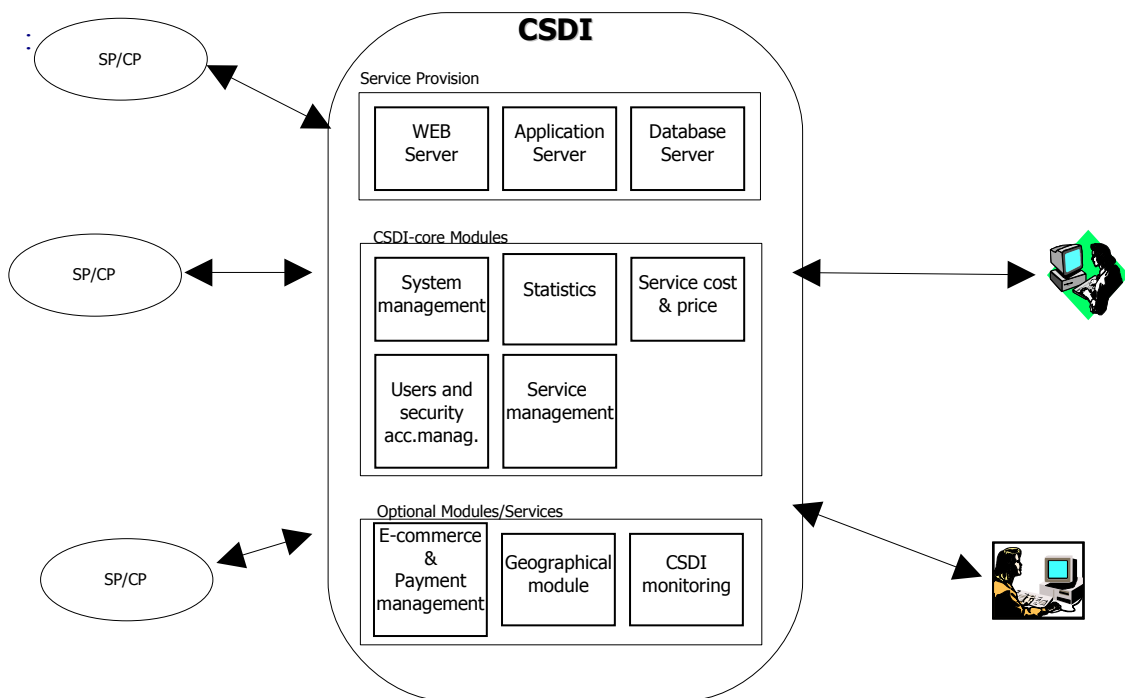**Tools and Applications for service delivery platforms**

The CITIES Consortium has defined a common methodology to design the CSDI. Following a top-down approach, the CSDI has been designed taking into account the existing situations, the requirements of services and applications corresponding to each Content Provider. According to these needs and constraints, basic modules have been identified as "common bricks" of the overall infrastructure (Generic Components). For these components the technical and functional specifications have been defined analysing the existing and the "target" scenarios. The CSDI consists of several Generic Components in charge of different aspects of the general services delivering.

The highest level of the common architecture shows that the CSDI is the cross point for user requests and service/content provisioning. By harmonising different organisational and technological constraints, the CSDI is able to present to the Brussels end-users a portfolio of integrated services and applications.

Remote Application

Remote Application

USERS / SP

Kiosks

Internet

PC (JAVA/ HTML)

Smart Cards

CSDI

Local Application / Java Services

Local Application / Java Services

Application Server
Server

SERVER

SE

WEB Server

Middleware

DB

On a functional point of view, the CSDI can be represented as composed by several Generic Components, which are grouped essentially in three classes: Service Provision modules which provide the user interface (web server) the "engine" (application server) and the data retrieval (DB server) for the services; the CSDI-core Modules which provide fundamental functions of the CSDI; the Optional Modules which refers to specific services not common to all four-site implementations.

CSDI

Service Provision

| WEB Server | Application Server | Database Server |

CSDI-core Modules

| System management | Statistics | Service cost & price |
| Users and security acc.manag. | Service management | |

Optional Modules/Services

| E-commerce & Payment management | Geographical module | CSDI monitoring |

SP/CP

SP/CP

SP/CP

At the infrastructure level, three main upgrade will be launched :

- Kiosks connections: In partnership with the STIB Content Provider, about 70 kiosks will be installed in the metro stations and connected to the CSDI-platform on the IRISnet Network.

- For the CSDI-platform acting as ISP, a second access to Internet, for back-up and load balancing purposes, with dynamic routing functionalities (such as BGP4) is already implemented, to double and extend the existing connection.

- For Content/Service Providers: IRISnet project covers the construction of a broadband network at the service of the administrations of the Brussels Region, the communes and the Brussels public hospitals. The network will link all of the institutions in the capital and will support data transmission, mobile phones and fixed telephone services.

The table below is an overview by module of the Brussels Products/Technology used to implement the Generic Components.

Generic Components	Products /Technology	
System Management	Linux RedHat, Apache	Web server
	Java VM, Java servlets, Java applications	Application server
	Oracle Rdbms	Database server
Users and security access management	HW/SW Firewall	Linux IP Chains
	Iplanet Directory, User Account /Rights Centralisation	LDAP Server
	Tacacs+	Cisco Secure
	Strong authentication/cryptography	Smart Card Certificate
	HTTPS	Apache Server
Service price	Java applications	Application server
	Oracle /MySql DB	Content Provider DB
Service management	Javascript, Java applications	Application server
	Oracle DB	Oracle DB
Statistic	Java servlets,B, Oracle DB	Application server
CSDI monitoring	NetSaint Server	Application server
Payment management	Transactional Database	Oracle DB
	Payment System	Netvision 'Easy Payment'
Geographical module	Brussels UrbIS Applet Own development (Java)	Client application
	Brussels UrbIS Server	Server application

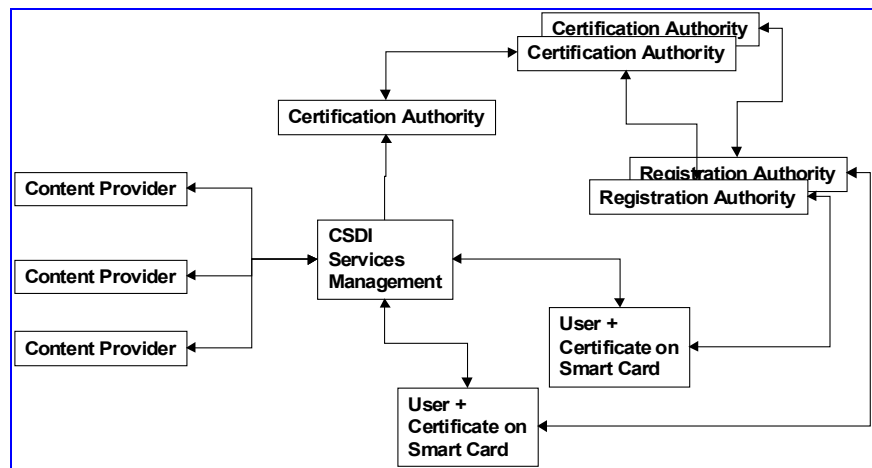| | Own development (Java) | |
| | Brussels UrbIS Database Own development | Linux MySql |

Generic Component : System management

The objective of this component is to provide the tools needed to effectively manage all the components of the system in an integrated way. In particular some of the tasks that this module has to accomplish are:

- Monitoring of Networks
- Monitoring of Operating Systems
- Monitoring of Applications (like Web servers)
- Monitoring of Databases
- Monitoring hard disk spaces and other hardware parameters

Generic Component : Security access management

Authentication is critical for any type of service where the business needs to be absolutely sure who it is dealing with. It is usually enforced through the issuing, use, and revocation of digital certificates. These certificates are intended to be an analogue to an identity card or passport, providing a positive ID. They are issued to individuals or businesses only after some level of verification.

The Brussels platform uses the Lightweight Directory Access Protocol (LDAP) for accessing online directory services. The LDAP directory service model is based on *entries*. An entry is a collection of *attributes* that has a name, called a *distinguished name* (DN). The DN is used to refer to the entry unambiguously. Each of the entry's attributes has a *type* and one or more *values*. In LDAP, directory entries are arranged in a hierarchical tree-like structure that reflects quality, geographic and/or organisational boundaries. In addition, LDAP allows us to control which attributes are required and allowed in an entry through the use of a special attribute. The values of the attribute determine the *schema rules* the entry must obey. LDAP defines operations for interrogating and updating the directory. Operations are provided for adding and deleting an entry from the directory, changing an existing entry, and changing the name of an entry. Most of the time, though, LDAP is used to search for information in the directory.

Generic Component : Service Price

A content provider stores the price of its services on a local database. Before the platform initiates the payment system, it performs a request on the CP Database and

receives the price for a given service. Then, this is transmitted to the payment system and the client is invited to confirm the payment.

Generic Component : Service Management

The objective of this component is to provide the tools needed to effectively manage all the components of the services in an integrated way. In particular some of the tasks that this module has to accomplish are:

- Service provisioning
- Multi-services request
- Service and transaction monitoring

Generic Component : Statistic

Different functionalities will be included in this module, depending on the type of the statistical data. Those types are:

statistics of user access

- statistics of feedback questionnaires and comments
- statistics of payment for services and information
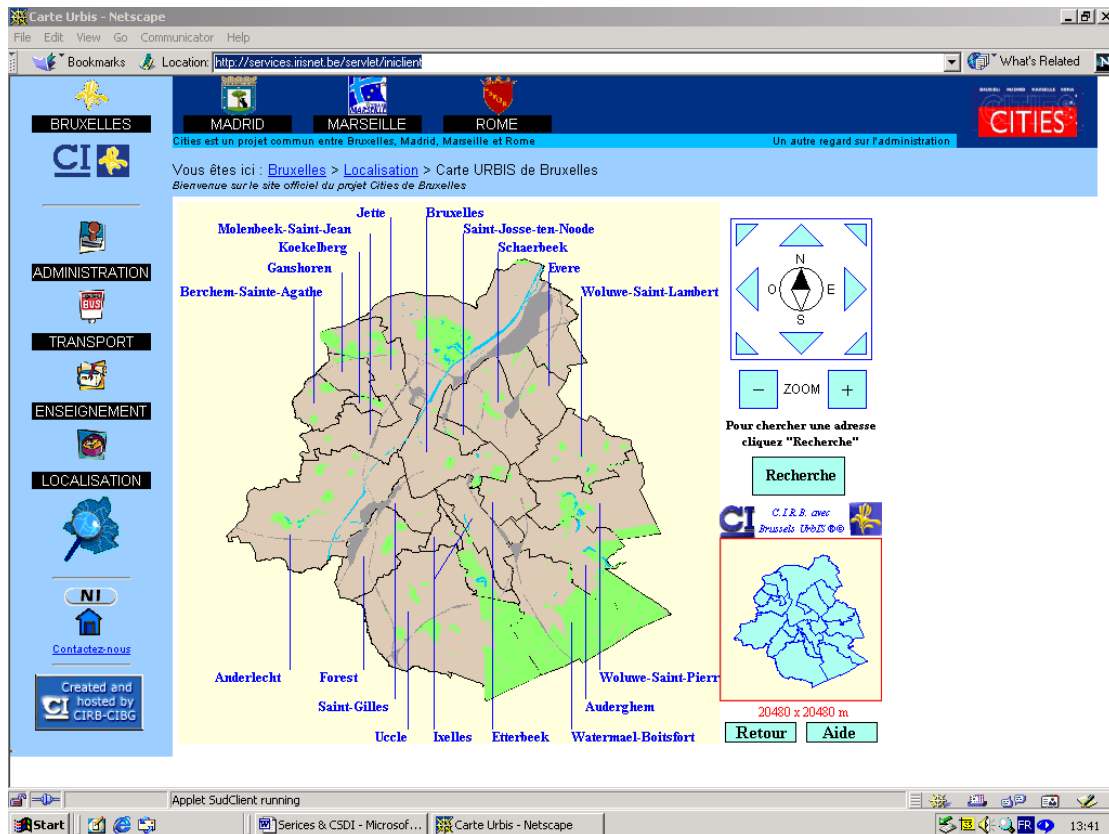- statistics of system management

Generic component : Geographical Module

This Generic Component aims to allow location and display on digitised maps through Internet. The location is based on a request produced by a user click on a map, by a user request keyed-in, or, by a request sent as a parameter to the application.

The "Generic" catactet of this component means:

- location of an address or place with street name and number, or with the national code assigned to each parcel in Belgium;
- location of 2 addresses and a route search between those 2 locations optimised according defined criteria such as: the shortest, the fastest, by public transport only, with mandatory points on the route, etc.
- location of a set of addresses (all the schools of the Region, for example)

The positioning module consists of three entities: the client, the server, and the database(s). The server contains the Web server and the location server. The location server is a multi-user Java application. The client part is a Java Applet, which is downloaded from the Web Server. The third part is a relational Urbis-Sud Database, which listens for queries sent by the server application. The Urbis-Sud Database contains graphic objects in a binary format as well as related alpha-numeric information.

The Geographical Module allows the user to:
- click the arrows in order to navigate,
- push the plus or minus buttons to get respectively more or less details,
- click the map to get directly a detailed description
- click "Rechercher" ("Search") button to perform a search address
- ask help
- quit the application by returning to the page which called the application.

The Telematics Services

The objective of this section is to carry out a detailed survey of present services that are integrated in Brussels on the CITIES common delivery platform. The telematic services for Brussels site are delivered by Public Administration (PA) and/or by private operators to Citizens and Small & Medium Enterprises (SME).
The services here described are adapted and integrated on the CITIES common delivery platform, maintained and developed at CIRB (Centre d'Informatique pour la Région Bruxelloise) as extensions to the MIRTO platform, already in use.

The services integrated within the Brussels platform deal with Public Administration, Public Transport, Health, and Education & Training

SECTOR : PUBLIC ADMINISTRATION

In the Brussels' Region, the main area in which Public Administration services are demonstrated and validated in the Project is related to on-line statistical requests on population, economy and employment and to the Regional and National Enterprise Database . Additionally, the on-line administrative document delivery service with electronic payment delivered through Internet and kiosks was integrated within the Brussels platform.

Service Provider : MRBC : Ministère de la Région Bruxelles-Capitale
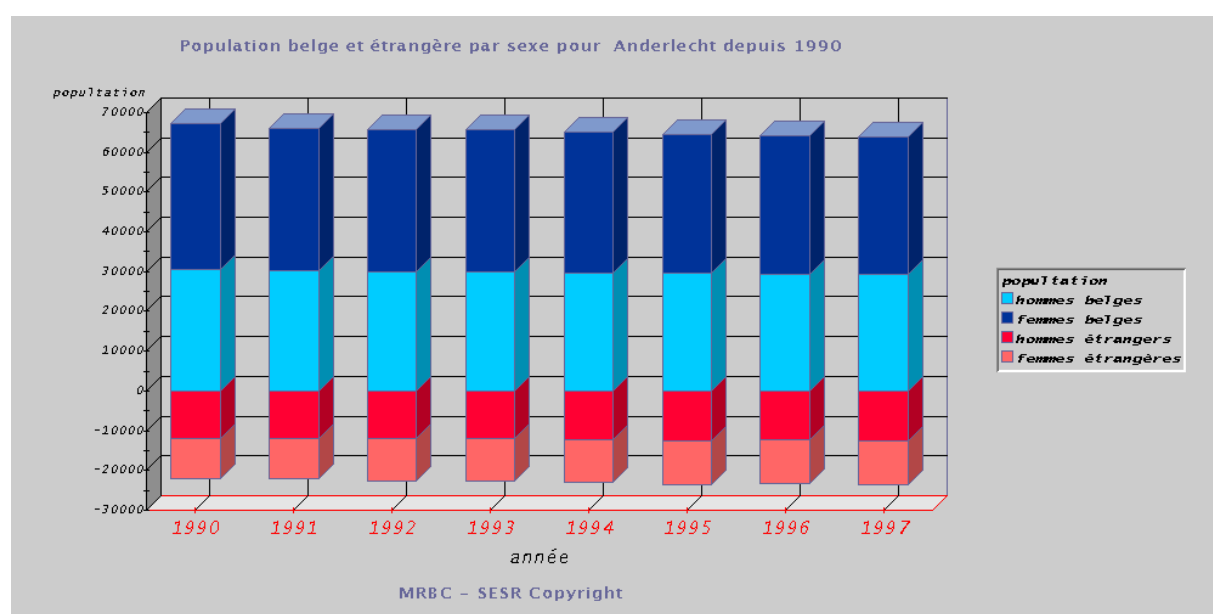**Content Provider : Studies and Regional Statistics Service**
Services :
- **Interactive Statistical Requests (STATDATA)**
- **Statistical Tables Requests (STATTABL)**

The main objective of these services is to improve the distribution of existing data available mainly on paper by creating an easy point and an improved historicity of the data. This data relates to demography, employment, unemployment, the working population, the incomes and household expenses, health, teaching and culture, production and companies, energy, transport, telecommunications and tourism, the regional development, property market and environment, security and public finances.

Two services are proposed to be implemented in the frame of the Cities project :
- STATDATA gives access to the actual tables existing in the Annual Statistical Book, based on requests on a database compiling the tables;
- STATTABL gives access to the data recorded on the chronological series, based on requests on a database compiling the yearly series.

The output for the STATDATA service is a gif file generated by a java servlet using a synergy between J2EE and XML technologies. For example, the the following graph, which is generated on request by using data contained in a database, shows the male/female distribution in Anderlecht (one of the 19 districts of the Brussels Region) for Belgium and Foreigner People from 1990 to 1997. The data which stands

at the bases of this graph can be found by using the STATTABL service. It can be retrieved either in a HTML format or in Excel format. Both formats are comme with statistical methodology descriptions.

Service /Content Provider: La Chambre de Commerce et d' Industrie de Bruxelles (CCIB)
Service :   Financial Reports and Statistics on Belgian and Luxemburg Companies (FINREP)

The objective of this service is to provides instant access to company reports on Belgian and Luxembourg companies, including detailed historical annual accounts and financia ratios.
The service covers 250,000 companies incorporated under Belgian law and the 200 largest Luxembourg companies (banks and insurance companies not included). Phone number, VAT Number, Commercial Registration Number and business name of the company, NACE-BEL, NACE and SIC US code, etc, as well as names and addresses of directors are available.
The data is assembled and fully validated by the National Bank of Belgium, Department "Centrale des Bilans".

Service/Content Provider : Commune de Woluwe-Saint-Pierre, Commune de Watermael-Boisfort
Service : On-line administrative document delivery (DOCDEL)

The objective of this service is to provide to citizens administrative documents delivered by the Local Administration. This service was developed during the MIRTO project and integrated within the Brussels CSDI during the CITIES project. Two Local Administrations provide this service: Commune de Woluwe-Saint-Pierre and Commune de Watermael-Boisfort.
Additionally to this services, other several generic services delivered by the Local Administration were integrated within the Brussels platform, such as: on-line electronic documents to download, to complet, to sign, and to send by mail, Diary for Local Events, donation service using electronic payment, etc.

SECTOR : TRANSPORT

As congestion of the traffic and mobility are key factors to all the public managers of the cities in Europe, the services integrated for this sector aim to provide the citizens with useful real-time information related to mobility and the use of public transport with a detailed plan for multi-modal paths. In this context, the Société des Transports intercommunaux de Bruxelles (STIB) plays a central role, by fully exploiting the public transport service network within Brussels-Capital Region.

In the last years, considerable efforts have been deployed in order to offer to citizens and professionals better services for public transport. The STIB developed several systems for providing travellers with theoretical and real-time timetables for the underground, the bus and the tram networks, as well as with a route search tool. Other services such as the after-sale service were considerably enforced.

The CITIES project plays a key role in the deployment of these services by delivering them through the common delivery platform opened on the Internet, platform which enable electronic payment, security exchange information and geographical localisation.

The project CAPITALS PLUS leads, in the Brussels Region, to the elaboration of a 'Traffic server' hosted by CIRB which deals with day-to-day flow of circulation, traffic jam, accidents or perturbations,…and all the relevant information to support mobility in the Region. The results of the Traffic Server will be put, via the common delivery platform, at the disposal of all the end-users concerned by mobility.

Service/Content Provider : Société des Transports Intercommunaux de Bruxelles (STIB)
Services : STIBCTH and STIBCRT

These services will let the user select and consult the planned and real time schedules (theoretical and real time timetables) for a bus, tram or a metro line**:**

STIB has developed an important infrastructure to trace the real-time position of its vehicles across the Region and elaborated complex models to analyse and monitor the public transport network. Stib is now able to put a the disposal of its users, a telematic service that will let users consult in real time for a given stop:
- the waiting time for the next vehicle at a selected stop-station, by destination of a tram, bus or metro line
- the current vehicles positions of all the vehicles on that line
- the eventual messages intended to the line or to the stop

In order to provide these services, a database will be updated by a server using the real time data received from the SAE(VSCS), TAMSY services, and from the wait-time servers.

Service/Content provider : STIB
Service : Route request

The aim of this service is to provide to the end user, an easy way to request the route using public transport from a starting to a destination point, optimised according different criteria (duration, number of transfers, underground preference,…).

The system is based on a search engine (HAST INFO) for the calculation of optimum routes. The geographical based Interface allows the selection of starting and destination points on a map and will be coupled with alphanumerical selections to specify the other necessary elements for the request (date, hour, other constraints). The results are then displayed in a cartographic format (layout of the ways) and in an alphanumeric format for the temporal description of the route.

A route search request is currently put at the disposal of the end-users by phone only; a call centre answers to the requests of the users vocally. The call centre uses for that an application that will have to be adapted to accept the requests coming from the common delivery platform.

Service/Content provider : STIB
Service : Monthly Pass Ordering (STIBPASS)

This service aim to delivered STIB Pass Ordering through the common delivery platform Monthly.

If the client is known – via a cookie - a table containing client identification is generated, containig the client card number, client name, month of the booked passes, price of the pass, delivery time and address for the pass. Then, the client can either renew the pass for the next month by paying and receiving a receipt (email), or modify the table containing personal data associated to the client card number.

If the client is unknown, a cookie will be created by using the information provided on-line by the cleint.

Service/Content provider : STIB
Service : Update in the 'lost and found' STIB Database (STIBCUST)

The STIBCUST telematic service consists of an interactive form letting the user fill in the information related to the lost object and his/her address or Email address. The form is then added in a data base for internal use only, and the STIB Office contacts the user by Mail or Email.

SECTOR : HEALTH CARE

In the frame of this CITIES project, the results achieved in the REMEDES project and maintained by the Medibridge server in Belgium, will be extended and generalised through the common delivery platform.
Two hospitals, Cliniques Universitaires Saint Luc (Medical Informatics Centre) and Institut Bordet as well as the Health Care Professional and laboratories already connected on the Medibridge server are the first target users for which the services will be implemented. In an extension phase, the services will be proposed to other practitioners and clinical services providers and to the public hospitals of the Brussels Region united under the IRIS structure at the Regional level.
To insure the authentication and the protection of the data and services delivered through the platform, digital certificates for electronic signature and an Authority of Certification were implemented.

SERVICE/CONTENT PROVIDER : MEDIBRIDGE

Service : Ordering of clinical services and messaging (MEDSERVE)

This service will allow health care professionals, on one hand, and Secondary and Tertiary Care Providers, on the other hand, to exchange structured messages, conforming to "de facto" or "de jure standards", through a secure store and forward (mailing) mechanism.
The receiver's application (running on Professional Health Care PC) is able to interpret the contents of the messages and to integrate them in the local database (EHCR, ADT, etc.) as meaningful information, available for further processing.

Several types of messages will be implemented:
- Clinical Laboratory request and reports
- Patient Hospital Admission, Discharge and Transfer
- Radiology reports, Technical examination reports

They will interact with various end systems inside the Secondary Care provider depending on the specific nature of the data they carry.

In case of the ordering of a clinical service, the transaction ends with the assignation of a unique REMEDES identifier.

SERVICE/CONTENT PROVIDER : MEDIBRIDGE

Service : booking of selected hospital services' (MEDIBOOK)

This service will improve the accessibility by allowing practitians in the field or patients themselves to negotiate appointments in real time with health care providers.

The booking service can be either activated from within the medical professional's Electronic Healthcare Record (EHCR) application or from an Internet Browser. Either way and irrespective of the number of appointment systems connected to the server and of their specific characteristics, the REMEDES service enables the user (health professional or patient) to book a medical act through an oversimplified dialogue where he/she has to enter only the following data:
- type of medical act (always entered by a health professional through an order)
- urgency (only entered by a health professional, if required)
- time constraints (if any)
- geographical constraints (if any)

SERVICE PROVIDER : Cliniques Universitaires Saint Luc and Institut Bordet

CONTENT PROVIDER : PATHOLOGISTS TEAM
Service : Multimedia telecommunication between pathologists (DIAGCHAT)

The integration of multimedia telecommunication between pathologists improves quality assurance, diagnostic accuracy, diagnosis and prognosis in routine practice. In this respect, the CITIES common delivery platform provides inter-operable tools for remote consultation of experts or consensus diagnostic through Internet applications.
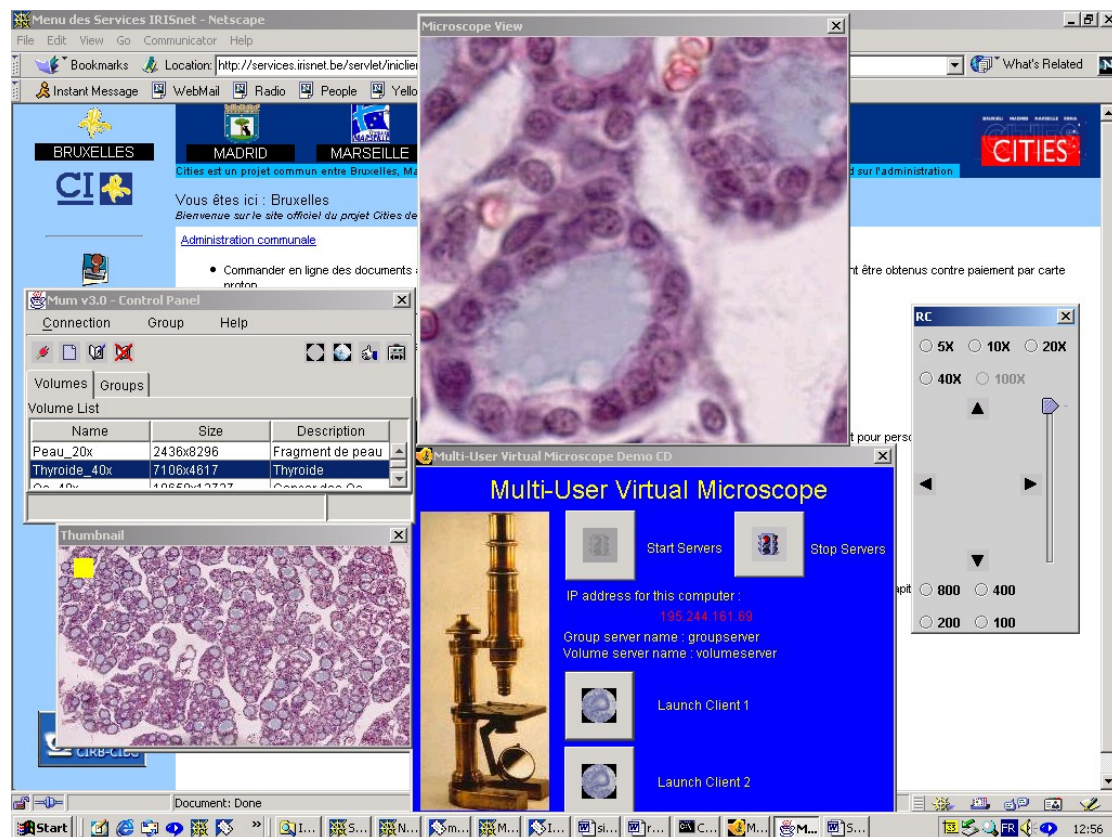
Several pathologists from St-Luc Hospital and Institut Bordet are participating to the pilot application. Experiences will also been launched with pathologists located in Belgium and in the rest of the world as one of the goals of this service is to offer support to practitioners located in remote areas but with an adequate Internet connection available.

The objective of this service is to provide on-line consultation of a histological section (thin strip) to several operators.

The core part service is composed of a virtual microscop which is a Java client/server application. It enables the deployment and the exploitation of large graphical files produced by scanning of a histological sample in 25 levels.

The figure bellow shows the user interface in the case where a sample is studied by a user. The user can explore the image and syncronize his view with that of another user.

The system requires at least one ADSL or 4 ISDN lines in order to have a "fluid" view.

The anatomo-pathologist will be equally able to access a reference database of clinical cases for training, general information and diagnostic purposes. The reference databases is already in place at the Saint-Luc Clinic and it is available to clinicians working at the hospital. The integration work to be carried out within Cities deals with the dissemination of the existing information to larger community of clinicians through the Internet network.

SECTOR : EDUCATION AND TRAINING

CIRB provides the Internet access to the about 600 primary and secondary schools located in the Brussels Region and put at the disposal of each school, 5MB of disk space to host their Web site. To follow-up on the results of the Mirto project, a dedicated telematic service will be implemented for those schools on the CITIES common delivery platform.

SERVICE PROVIDER : Schools located in the Brussels Region

CONTENT PROVIDER : CIRB WITH SCHOOL's WEB SITES

Service : SCHOOLCO

According to the decision made by the three first levels of Government in Belgium (Federal, Community, Region), schools are now connected to the Internet with ISDN routers and protected by Proxy servers and private IP addresses.
In the Brussels Region, besides a Lan, 8 Pcs and printers, each schools has been given the opportunity to develop a web site of max 20 MB, hosted on the servers at CIRB.
The service that will be designed for the schools will let their users :

- to update the web site, on –line, via a secure FTP connection using SSH software
- to access a collaborative space on Internet with :
    - a search tool oriented on the web sites of the regional schools only
    - an agenda dedicated to the advertisement of their events, messages, call for collaboration,….
    - a forum to discuss pertinent topics or share experience

Depending on the expressed needs by schools and general consensus, that collaborative space could be opened to a larger group of users, including for example the parents of the students.

Service/Content Provider : Société de Développement pour la Région de Bruxelles-Capitale (SDRB)
Service : LOCBUILD

The objective of this service is to supply users with acces to the SDRB' Database containing the inventory of vacant business buildings for sale or rent in the Region of Brussels-Capital.
For each vacant building there is an identification sheet including: address, photo, short description of the building, asking price, cost price by the usable meter, phone number of the contact person.
In addition to the search function based on criteria fixed by the user, the integration of this service within the CSDI permitted to access the location generic component (UrbIS Map) within the service.

Service/Content Provider : Quartier Latin (QL)
Service : QLKOT

The aim of this service is to develop a booking system for students who are looking for rental rooms. Five local organisations have put in common their own information in order to build a common database hosted by the CIRB. The first step was to provide students with information concerning available rooms. The next step is to build the booking system which will enable students to book a room before signing the contract.