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Table of contents

1	Introduction	6
1.1	Scope of the document	6
1.2	Document overview	6
2	References.....	7
2.1	Definitions.....	7
2.2	Acronyms	10
2.3	Applicable documents	11
2.4	Reference documents	12
3	Executive Summary	13
4	Original research objectives	13
5	Methodologies.....	14
5.1	Project Concept.....	14
5.2	Project Methodology.....	15
5.3	Project Consortium.....	18
6	Project results and achievements	20
6.1	Technical Achievements	20
6.1.1	Development of Novel Services	20
6.1.2	The GIFTS Demonstrator and the pilots.....	22
6.2	Technical Assessment	29
6.2.1	Innovations	29
6.2.2	Contribution to Standardisation	29
6.3	Economic And Related Marketing Assessment	30
6.3.1	Usefulness Of The GIFTS Service	30
6.3.2	Conclusions on pilot evaluation and validation results	31
6.4	Market Studies	32
6.4.1	Overview And Study Assumptions	32
6.4.2	Summary Of Main Results.....	32
7	Deliverables and References	34
7.1	Project Deliverables	34
7.2	Dissemination and Concertation	36
7.2.1	The GIFTS Workshops.....	37
7.2.2	Dissemination Material	37
8	Future Outlook and Conclusions.....	40
8.1	Commercial And Market Opportunities	40
8.1.1	Commercialisation aspects.....	40
8.1.2	Future Scenario	41
8.2	Exploitation Intentions of GIFTS Partners	42
8.3	Conclusion.....	43
9	Project Information	45

List of Figures

Figure 1	The GIFTS project work packages and their relationships	16
Figure 2	The GIFTS project Work Breakdown Structure.....	17
Figure 3	The GIFTS project work packages and their timescale	18
Figure 4	The GIFTS platform architecture	22
Figure 5	The GIFTS components.....	24
Figure 6	GIFTS overall trials scenario.	25
Figure 7	The GIFTS Services access page on the WEB	25
Figure 8	The GIFTS Fleet Management Services	28
Figure 9	GIFTS WEB site page	39
Figure 10	The GIFTS Business Model	41
Figure 11	The GIFTS panel.....	44

List of Tables

Table 1:	EU15 estimated no. of users (units of means of transport).....	33
Table 2:	Exploitable Results and Owners	42

1 Introduction

1.1 Scope of the document

The objective of this report is to provide a final comprehensive view of the results obtained, the methodologies and approaches employed, changes in the state-of-the-art since the project was contracted, and elaborate on the degree to which the objectives were reached.

1.2 Document overview

Section 1: *Introduction* - scope of the document and document overview.

Section 2: *References* - Definitions and Acronyms adopted in the document, applicable documents and references.

Section 3: *Executive Summary* - a summary of the objectives and main achievements of the project; the Consortium's composition and the roles of the partners involved are also described.

Section 4: *Project objectives* with a summary of the original research objectives.

Section 5: *Methodologies* employed to achieve the project objectives.

Section 6: *Project results and achievements* – including an overview of technical achievements and market studies.

Section 7: *Deliverables and References* - the major project deliverables are briefly described and a comprehensive table of deliverables attached. Other references to articles, conference presentations etc. are also listed.

Section 8: *Future Outlook and Conclusions* – A description of how the results and achievements of the project have benefited each partner and how the partners intend to use and exploit these further.

2 References

2.1 Definitions

<i>Item</i>	<i>Description</i>
<i>Architecture</i>	The organisational structure and associated behaviour of a system. An architecture can be recursively decomposed into parts that interact through interfaces, relationships that connect parts, and constraints for assembling parts. Parts that interact through interfaces include classes, components and subsystems.
<i>Cargo</i>	Goods transported or to be transported.
<i>Cargo identity</i>	Unique designation for the physical units of a goods item. It is often carried on a goods label, e.g. carrying a bar-code, affixed to the units.
<i>Cargo monitoring</i>	Recording of data related to the cargo status, e.g. position, humidity, temperature.
<i>Carrier</i>	The party undertaking transport of goods from one point to another.
<i>Combined transport</i>	The movement of goods in one and the same loading unit which uses more than one mode of transport without handling the goods themselves in changing modes.
<i>Communication link</i>	A technical system that allows voice and/or data communication between individuals or systems at different locations, or mobile.
<i>Consignee</i>	The party such as mentioned in the transport document by whom the goods, cargo or containers are to be received and accepted.
<i>Consignment</i>	A goods item or collection of goods items (to be) transported from one or many dispatch locations to one or many delivery locations for one consignor to one consignee under the terms of one contract of carriage.
<i>Consignor / Shipper</i>	An individual or organisation that prepares a bill of lading by which a carrier is directed to transport goods from one location to another.
<i>Consolidation</i>	The grouping together of smaller consignments of goods into a large consignment for carriage as a larger unit in order to obtain a reduced rate.
<i>Contract</i>	A legally binding agreement between two parties in which the specific titles, rights, commitments and obligations of both parties are defined.
<i>Delivery notice</i>	A message ending a logistical activity by stating the result, e.g. "cargo delivered at destination requested".
<i>Delivery time/date actual estimated requested</i>	Date/time on which goods or consignment are delivered at their destination. Date and/or time when the shipper of the goods expects delivery will take place. Date on which buyer requests goods to be delivered
<i>Design</i>	The part of the software development process whose primary purpose is to decide how the system will be implemented. During design strategic and tactical decisions are made to meet the required functional and quality requirements of a system.
<i>Dispatcher</i>	A person who performs the detailed allocation and subsequent control of transport resources to individual transport orders.
<i>EDI (Electronic Data Interchange)</i>	The transfer of structured data in electronic form between computer systems in separate organisations.
<i>Equipment</i>	(In transport) Material resources necessary to facilitate the transport and handling of cargo. Transport equipment does not, under the given circumstances, have the ability to move by its own propulsion; e.g. sea container, trailer, unit load device or pallet.
<i>Equipment of vehicle, -</i>	Mechanical devices mounted on vehicle to enable loading/unloading, e.g. crane,

<i>Item</i>	<i>Description</i>
<i>loading/unloading</i>	derricks, rear lift platform.
<i>Equipment of vehicle, - communication</i>	See on board communication equipment.
<i>Fleet</i>	All the vehicles, including drivers, at the disposal of one unit of (business or operation) management for performing the business or operation.
<i>Fleet business transactions</i>	Inquiry acquisition, offer calculation and submission, contract settlement, invoicing and payments.
<i>Fleet management</i>	Planning, monitoring, controlling and evaluating the movements and operations of a vehicle fleet.
<i>Forwarder</i>	The party arranging the carriage of goods including connected services and/or associated formalities on behalf of a shipper or consignee.
<i>Freight</i>	<ol style="list-style-type: none"> 1. Goods in transport from one location to another. 2. The amount of money due for the carriage of goods and payable either in advance or upon delivery. 3. The revenue earned from the movement of cargo.
<i>Freight and fleet management</i>	The combined activities of freight management and fleet management.
<i>Freight business transaction</i>	Handling of market inquiries, offer and supplier evaluation, contract settlements including just-in-time requirements, invoicing and payments.
<i>Freight centre</i>	See Transport centre.
<i>Freight invoice</i>	The carrier's invoice for transportation charges applicable to a freight shipment.
<i>Freight management</i>	A set of activities related to the logistics chain from the supplier to the receiver of goods with the associated information and transaction flow.
<i>Freight operation planning and preparation</i>	Preparation of transport documents, such as transport orders, customs declarations, dangerous goods declarations and notices of dispatch.
<i>GIFTS Demonstrator</i>	The project target system built-up from the integration of the GIFTS composing subsystems: the GIP and the MTs.
<i>GIFTS Integrated Platform GIP</i>	The platform built-up from the integration of the GSC, the SMPs and the FTs.
<i>GIFTS Service Centre GSC</i>	GIP main subsystem, implementing both administrative, communication services and specialised services. It also includes the Nav/com segment.
<i>GIFTS Service Module Provider SMP</i>	Distributed GIP subsystem implementing a specialised service. The Service Module is a software object that provides specific applications. The Service module also provides a specific XML based interface to invoke such applications.
<i>GIFTS User Terminal</i>	The Mobile equipment installed on board the monitored vehicles (also referred as MT).
<i>Intermodal change planning and preparation</i>	Selecting transport modes and providing necessary booking.
<i>Intermodal transport</i>	Transport where a part of the journey is by rail, inland waterway or sea and any intermediate parts are carried out by road.
<i>Intermodal Transport Unit (ITU or UTI)</i>	Containers, swap bodies or semi-trailers suitable for intermodal transport.
<i>Logistics</i>	<p>The planning, execution and control</p> <ul style="list-style-type: none"> - of the movement and placement of people and/or goods, - and the supporting activities related to such movement and placements, within a system organised to achieve specific objectives.
<i>Multi-modal transport</i>	The carriage of goods by at least two different modes of transport.
<i>On board communication equipment</i>	Radio or infrared communication equipment enabling voice and/or data communication between the vehicle, stationary or in motion, and fixed stations.

<i>Item</i>	<i>Description</i>
Party	Generic term for the different actors involved in a logistical activity.
POD	Proof of Delivery
Road plan	See: Route plan.
Route plan	The path to be taken to get from a starting point to a point of destination or to supplement a trip plan.
Shipment	A separately identifiable collection of one or more goods items (available to be) transported together from a consignor to a consignee. (Often synonymous with Consignment.)
Shipper	See: Consignor.
Status	Condition of object, person or process at one point in time.
Terms of delivery	(General) All the conditions agreed upon between a supplier and a customer with regard to the delivery of goods and/or services.
Time of delivery	See Delivery time/date.
Time of departure	Time of actual departure from a stated location.
Tracing	Activity, at request, of finding and reconstructing the transport history of a given consignment, vehicle, equipment, package or cargo.
Tracking	Activity of systematically monitoring and recording the present location and status of a given consignment, vehicle, equipment, package or cargo.
Transport centre	The premises and the facilities, related to freight transport services, e.g. facilities for transshipment, serving a number of transport companies. A transport centre is often owned and operated by several of the companies being served.
Transport order	A Shipping (Consignment) instruction or the task definition given by a dispatcher to a driver.
Transport service provider	A generic term for an actor in transport links within the logistic chain, e.g. carrier, forwarder or agent.
User	Any individual or group ultimately making use of the output from a computer system, distinct from personnel responsible for building, operating or maintaining the system.
Validation	Validation is, according to its ANSI/IEEE definition, 'the evaluation of software at the end of the software development process to ensure compliance with the user requirements'. Validation is, therefore, 'end-to-end' verification.
Vehicle and cargo management	A set of activities related to the management of individual vehicles and their cargo.
Vehicle monitoring	Beyond the contribution to fleet monitoring, it means closer consideration of the aptitude to operate, through diagnosis and predictions relating to driver and vehicle organs.
Vehicle operation	All activities related to the vehicle journey, such as vehicle, driver and cargo/passenger status monitoring and recording, actual route selection, reception of changed orders and payment of fees.

2.2 Acronyms

<i>Item</i>	<i>Description</i>
AD	Applicable Document
ATR	Accounting Transaction Record
CBA	Cost Benefit Analysis
CEA	Cost Effectiveness Analysis
COM	Communication
DB	Database
EC	European Commission
EDI	Electronic Data Interchange
EDIFACT	Electronic Data Interchange For Administration, Commerce and Transportation
EGNOS	European Geo-stationary Navigation Overlay Service
ERP	Enterprise Resource Planning (system)
ESP	External Service Provider
FT	Fixed Terminal
GIP	GIFTS Integrated Platform
GIP	GIFTS Integrated operational Platform
GIS	Geographic Information Systems
GPRS	(General Packet Radio Service). An upgrade to the GSM standard and widely seen as a first step towards a 3 rd generation mobile standard.
GPS	Global Positioning System
GS	Gateway Station
GSC	GIFTS Service Centre
GSM	Global System for Mobile communication
HW	Hardware
INFSO R&D	Information Society Research & Development
IP	Internet Protocol
IST	Information Society Technology
LDAP	Lightweight Directory Access Protocol
MMI	Man-Machine Interface
MRP	Manufacturing Resource Planning (system)
MT	Mobile Terminal
NA	Not Applicable
NAV	Navigation
ORBCOMM	A LEO satellite constellation-based system
PDA	Personal Device Assistant
PKI	Public Key Infrastructure
PLMN	Public Land Mobile Network
POD	Proof of Delivery
PSTN	Public Switched Telephone Network
QoS	Quality of Service
RD	Reference Document
RFID	Radio Frequency IDentification
RQS	ReQuest to Send

<i>Item</i>	<i>Description</i>
RTE	Real-Time Enterprise
SCM	Supply Chain Management
SLA	Service Licence Agreement
SME	Small- and Medium-Sized Enterprise
SMP	Service Module Provider
SMS	Short Message Service
S-UMTS	Satellite – Universal Mobile Telecommunication System
SVA	Shareholder Value Analysis
SW	Software
SWOT (Analysis)	Strengths, Weaknesses, Opportunities and Threats (Analysis)
TBD	To Be Defined
TCO	Total Cost of Operation
Tlc	Telecommunications
UMTS	Universal Mobile Telecommunication System
UNCITRAL	United Nations Commission on International Trade Law
VPN	Virtual Private Network
WBS	Work Breakdown Structure
WP	Work Package
WTD	Working Time Directive
XML	eXtensible Markup Language

2.3 Applicable documents

ID	Title	Document Number	Issue	Date
-	GIFTS Contract Annex I - "Description of work"	IST-2000-29364-Annex I		02/03/2001
D00	Project Management Plan	GIFTS/PLN/D00	1	30/11/2001
D01	Project Presentation	GIFTS/PRS/D01	1	03/12/2001
D02	Risk Assessment Plan	GIFTS/PLN/D02	1.1	20/12/2002
D03	User Needs Identification and Analysis	GIFTS/REP/D03	1	12/02/2002
D04	Demonstrator Architecture Design	GIFTS/REP/D04	1	07/08/2002
D05.	GIFTS Service Centre Design	GIFTS/REP/D05	1.1	20/12/2002
D05.A1	Annex 1 - GSC modules Design	GIFTS/REP/D05.A1	1.1	20/12/2002
D05.A2	Annex 2 - SMP e-fleet design	GIFTS/REP/D05.A2	1.1	20/12/2002
D05.A3	Annex 3 - SMP e-business design	GIFTS/REP/D05.A3	1.2	20/05/2003
D05.A4	Annex 4 - SMP Cargo matching design	GIFTS/REP/D05.A4	1.2	20/05/2003
D05.A5	Annex 5 - ICD (Interface Control Document) GSC-SMPs	GIFTS/REP/D05.A5	1.2	20/05/2003
D06	GIFTS Integrated Platform AIT Plan	GIFTS/REP/D06	1.1	20/12/2002
D07	E-commerce Design Report	GIFTS/REP/D07	1.0	30/09/2002

ID	Title	Document Number	Issue	Date
D08	Internal Billing Function Design	GIFTS/REP/D08	1.0	30/09/2002
D09	GIFTS User Terminal Design	GIFTS/REP/D09	1.0	20/12/2002
D10	GIFTS User Terminal AIT Plan	GIFTS/REP/D10	1.0	20/12/2002
D11	GIFTS Demonstrator AIT Plan	GIFTS/REP/D11	1.0	18/07/2003
D15	User Terminal Manual	GIFTS/REP/D15	1.0	02/03/2004
D16	GIFTS Demonstrator AIT Results	GIFTS/REP/D16	1.0	22/01/2004
D17	Pilot Projects: Validation Plan	GIFTS/REP/D17	1.0	27/02/2004
D18	Pilot 3 End-to-End E-commerce function	GIFTS/REP/D18	1.0	27/02/2004
D19	GIFTS Evaluation Data Capture Mechanism	GIFTS/REP/D19	1.0	08/06/2004
D20	Evaluation Report	GIFTS/REP/D20	1.0	12/10/2004
D21	Concertation and Clustering Plan	GIFTS/REP/D21	1.0	28/03/2002
D22	Dissemination and Use Plan	GIFTS/REP/D22	1.0	26/07/2002
D24	Exploitation Plan & TIP	GIFTS/REP/D24	1.1	15/03/2005
D25	GIFTS Business Plan	GIFTS/REP/D25	1.1	15/03/2005

2.4 Reference documents

Ref. / Document Title	Document Number	Issue	Date
RD1. GIFTS Consortium Agreement	GIFTS Consortium Agreement	Final Version	19/11/2001
RD2. GIFTS Consensus Project Review Report	Result of the GIFTS Annual Review 2002	-	21/10/2002
RD3. GIFTS Administration Data Model via LDAP	GIFTS/TPZ/T_N/026	1.0	30/05/2003
RD4. S-UMTS emulator for a Global Intermodal Freight Transport System (GIFTS project)	GIFTS/TPZ/T_N/039	1.0	18/10/04

3 Executive Summary

Project Title & Acronym:	GIFTS: Global Intermodal Freight Transport System.
EC Programme:	5th Framework Programme, Key Action I - Systems and services for the citizen
Action line:	IST-2000-1.5.1 - Intelligent transport infrastructure
Contract Number:	IST-2000-29364

The GIFTS project has developed an open access Internet portal/e-marketplace providing high-technology services to the transport and logistics industry in the European Union, in particular addressing the needs of operators, service providers and end users working in small and medium-sized enterprises (SMEs).

GIFTS addresses the Task 1.5.1 (Intelligent Transport Infrastructures – 3rd bullet of Focus: Advanced IST systems for supporting logistics and co-operative resource management for the whole Transport chain) of the INFSO R&D programme, focusing on optimising freight transport in Europe. The project aims at improving and integrating in one platform existing and emerging intermodal freight transport technologies.

4 Original research objectives

The main GIFTS aim was to design and develop, for the pilot cases, a fully-integrated operational platform, referred to in this document as the *GIFTS Integrated operational Platform – GIP* for the use of systems that manage door-to-door freight transport both intermodally and unimodally. To use a more common terminology in freight transport today, GIFTS aimed to provide the blueprint of a system that would provide an integrated service to freight transport operation that would be particularly accessible to the small and medium “players” in the field. GIFTS provides applications for the operational (e.g. track, trace and monitoring of the door-to-door journey; aid in trip management; tracking and tracing of goods; fleet management, etc.), as well as all the e-commerce functions and insurance of a door-to-door freight transport chain (i.e. including order matching, e-document transfer, e-payment, etc.). The GIP has its own administrative functions based on a CORBA platform for registration, secured access, customer profiling, etc.. The use of the GIP will be mode independent (i.e. it is applicable to both unimodal as well as multi-modal transport applications).

To accomplish these overall objectives, GIFTS had the following sub-objectives:

1. Set up and operate in the GIFTS pilot cases a European Freight Data Communications Network that would be accessible from all points along the supply chain and for all users through Internet connection. This network would be accessible from the most relevant and diffused telecommunications media and satellite navigation tools, including the European Galileo system.
2. Set up the basis and operate, as applicable in the GIFTS pilot cases, a Global Freight Information System, as a global technical and telematics-based data infrastructure for the various freight transport services that the users would need to be aligned for full integration within the future European ITS (Intelligent Transport System).
3. Provide an architecture to allow a wide variety of freight transport-related systems and services, (e.g. tracking, tracing, positioning and monitoring systems) to combine and operate as a single integrated service along and across the full length of the supply chain, and to include in this the collection of

fleet management data under secure and confidential conditions. In other words, GIFTS would develop an architecture for a freight transport “one-stopshop” Internet portal primarily aimed at the SME user. The systems and services to be included within the GIFTS architecture will be the following:

- a. Access to cargo / carrier matching services accessible via the GIFTS platform and the Internet.
 - b. Provision of an order enquiry/order placement system, integrated with the e-commerce / m-commerce system of the (user) company.
 - c. Access to load and transport insurance functions.
 - d. Access via the Internet to systems for the transmission of Bills of Lading and Manifest data linked to inventory control systems and warehouse operations, within an intermodal framework.
 - e. Provision of information services for individual customer profile requirements (Individual Customer Profiling).
 - f. Potential extension of cargo monitoring possibilities to embrace, for example, the individual contents of a container and non-unitised loads by use of automatic data collection devices.
 - g. Access to a set of payment functions for freight transport, integrated with the rest of the functions mentioned above.
4. Develop a fully-operational administration system for the GIP to handle registration, authentication, security, etc. for the users of GIFTS, the freight transport operation and control functions and the communication system infrastructure between the Service Centre and Users (both mobile or fixed) provided with the related user terminals.
 5. Identify the issues that the GIFTS platform design should take into account for the integration of intermodal transport in its functionalities. In other words, to define the “intermodal” aspects of which the Platform should take account in order to be applicable to intermodal and unimodal transport.
 6. Develop pilot applications in which to demonstrate and test in practice the GIFTS concepts for the GIP, including testing of the various administration elements of the system such as registration, authentication, security and other related issues.
 7. Provide an independent and full evaluation of the new applications mentioned above under real working conditions for road and rail transport operators and e-commerce services.
 8. Develop a realistic Exploitation Plan that would build upon the innovative concept of GIFTS as an all-embracing platform and set of applications that will be integrated to form a (near) “total solution” for supply chain operations that was particularly suited to intermodal and multi-modal transport situations. The intention was that the GIFTS Platform, as a novel technology, would be repeatable by competitor service providers to form an interoperable, competitive, global system in a similar manner to the mobile telephony industry, thereby utilising resources more economically, and creating an industry standard that was inclusive of all technologies and services.

5 Methodologies

5.1 Project Concept

GIFTS is a unique proposition, best described as an open access Internet portal/e-marketplace, providing a comprehensive range of integrated services for the door-to-door management of intermodal freight transportation to be provided to the transport and logistics industry and all other entities closely associated

with the supply chain. GIFTS provides a neutral distributed IT environment for services-orientated applications able to integrate different stand-alone services which, when combined together, can solve more complex business processes. GIFTS also delivers integration of the physical transport asset into the IT environment by means of advanced mobile terminal equipment.

The ultimate vision for the GIFTS platform is that the services provided as part of the platform or to which the platform provides access will be used in whole or part by operators in the freight transport industry and that a business opportunity could be derived from it. The consortium's research and the successful results of the trials have identified a specific profile of benefits in the road and rail sectors which mitigates towards these sectors becoming the initial target market for GIFTS (see Section 6.4 Market Studies).

5.2 Project Methodology

The GIFTS project activities were structured into seven first-level work packages, namely WP1 ... WP7, detailed in the following table.

WP No.	Description
WP1	Dealt with the overall project management, including planning co-ordination, monitoring and control of the activities carried during the duration of the project, issuing of the related progress activity reports together with the organisation and management of project meetings. The WP1 leader was the Project Co-ordinator (Telespazio).
WP2	Analysed the possible user profiles in order to identify and define the User Needs and Requirements in terms of service performance, user interface and access medium.
WP3	Addressed the identification and definition of the services that would be provided, tailoring their development to the user-specific needs, in terms of functional modules architecture, identifying the service centre and user terminal overall architecture and designing the components set to provide the required services. This WP also dealt with the specifications of both the telecommunications and navigation segments of the GIFTS demonstrator system. As regards the telecommunications, the initial activity was in addressing the overall system, and then the functions of the Gateway equipment and of the user terminal, according to the various elements, e.g. GSM, EMSAT and the application layer. As regards navigation, WP3 resulted in the specifications of the GPS and EGNOS equipment needed to support the applications to which users would have access via the Service Centre. Additionally, this work-package covered the design of all e-commerce functionality: enquiry order application, cargo matching, e-payment, freight insurance, document transfer EDI/XML freight insurance in line with the needs of customers, suppliers and the banking community which had been previously identified.
WP4	Dealt with the development and implementation of the GIFTS Demonstrator System. This activity was based on the specifications generated in WP3 and started by setting-up the overall architecture. It then continued with all activities leading to the implementation of all the required functions, both telecommunications (user terminal and Gateway Station plus the infrastructure supporting the interface with the terrestrial and satellite framework), and navigation (user terminal and related services). WP4 also covered the Demonstrator assembly, integration and test plan, factory integration and testing. In addition, this work-package covered the development and /or links to all e-commerce functionality: enquiry order application, cargo matching, e-payment, document transfer EDI/XML, freight insurance in conjunction with the need of customers, suppliers and the banking community
WP5	Concerned on-site setting up of the activities of the GIFTS demonstrator on-site setting-up, and for each one of the three pilot projects the trials definition, planning, trial runs and collection of trial results. WP5 also included the data collection during the trial campaign. The trials included 1 – rail, 1 – road and an e-commerce demonstration.
WP6	Dealt with the analysis of the data collected during the trial campaign and assessment of user feedback.
WP7	Dealt with the dissemination, concertation and results exploitation. The promotion of the results, aimed at developing technological transfer. The achieved results were disseminated

WP No.	Description
	through the a number of meetings and workshops. Concertation with proper bodies was also carried out.

The relationship between the work packages, i.e. the project study logic, is showed in Figure 1:

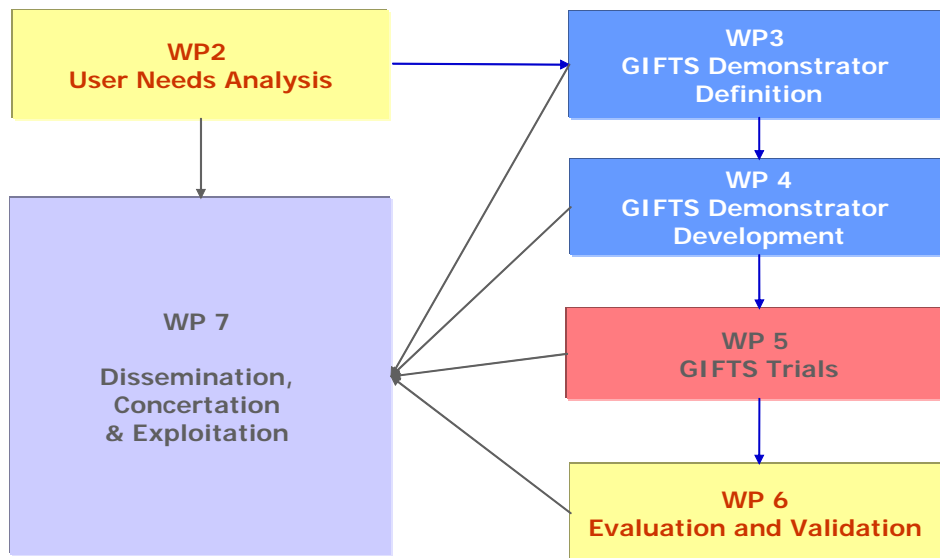


Figure 1 The GIFTS project work packages and their relationships

Figure 2 shows the Work Breakdown Structure (WBS), as well as the activities originally foreseen for the various (Work Packages) WPs.

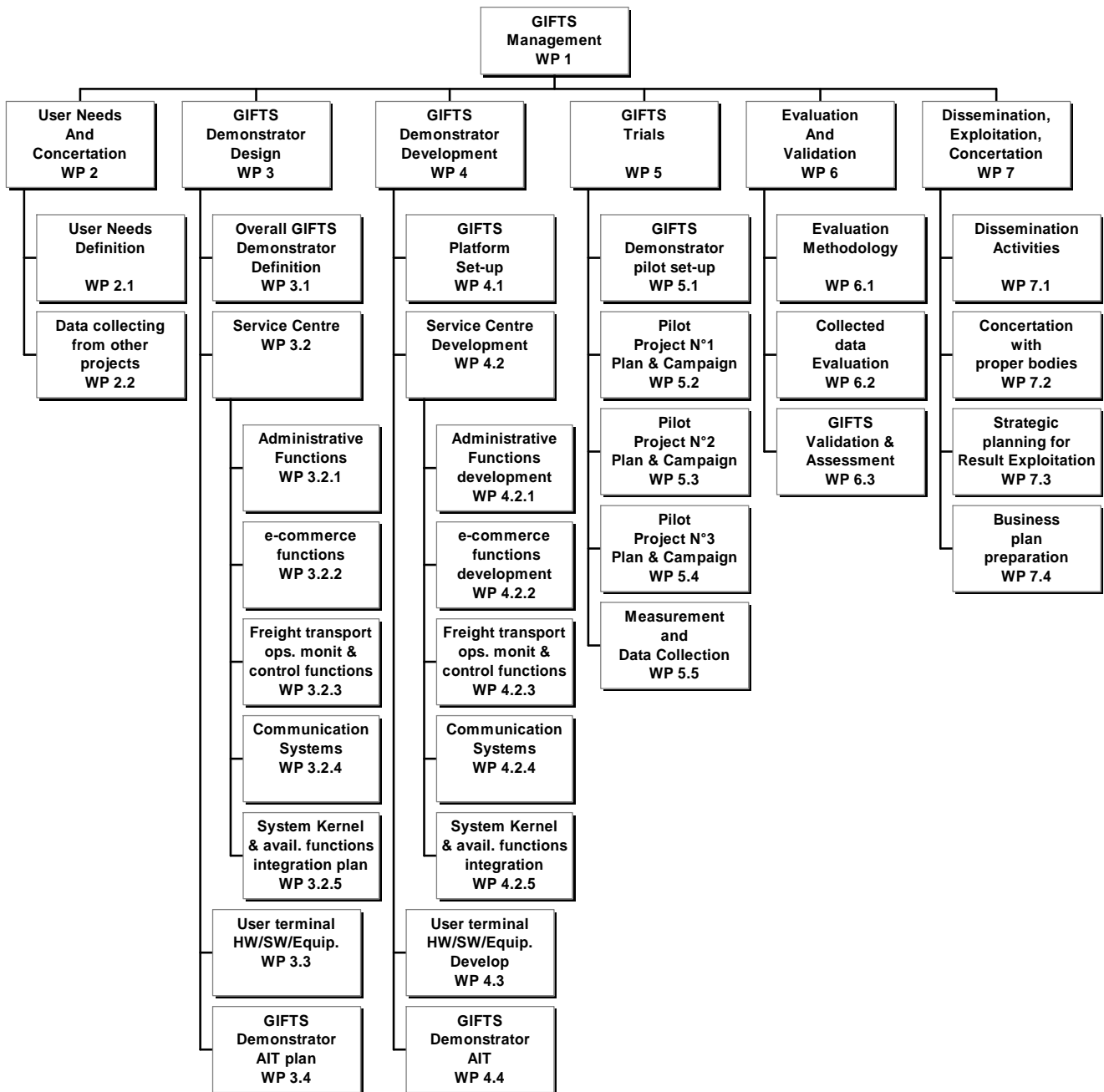


Figure 2 The GIFTS project Work Breakdown Structure.

The project activities were started on September 2001 and ended in October 2004 Figure 3 shows the overall planning.

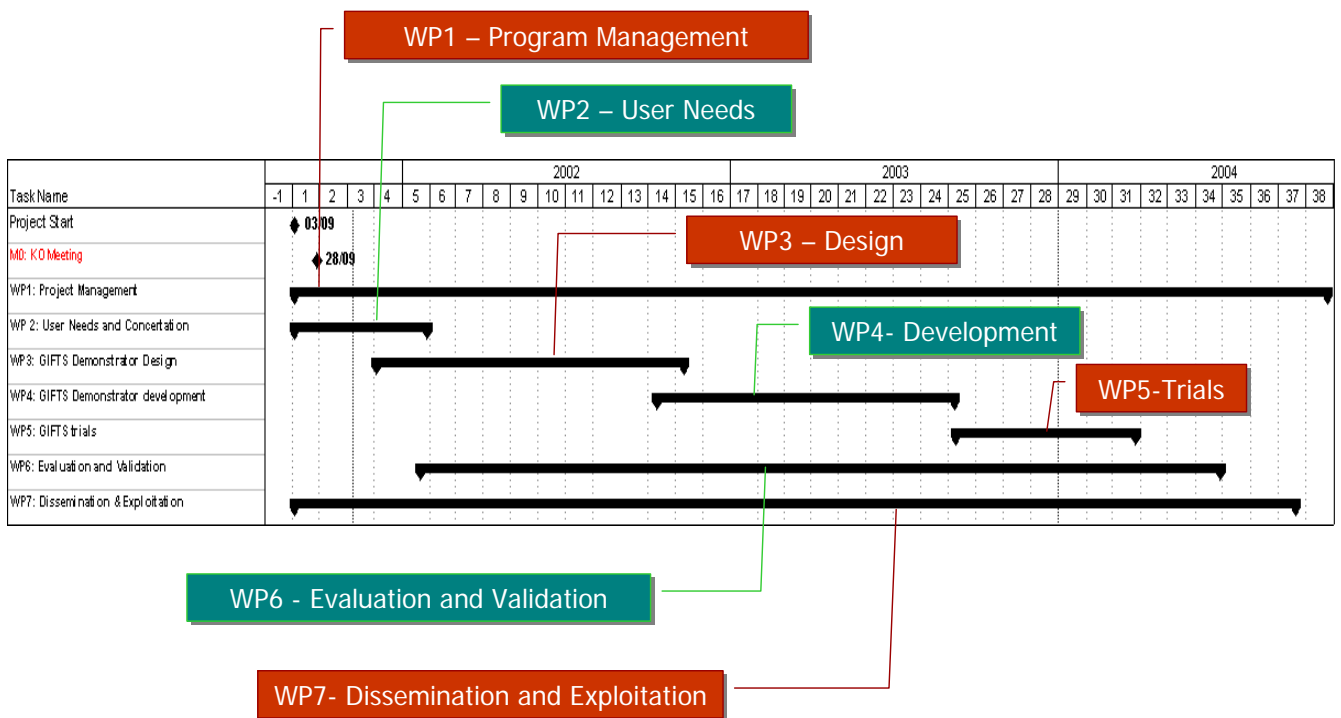


Figure 3 The GIFTS project work packages and their timescale

5.3 Project Consortium

The GIFTS Consortium is composed of eight companies with proven experience and complementary skills.

The following table provides a short company profile for each consortium member and an outline of their role in the project.

Company	Country	Role	Role description
Telespazio S.p.A.	I	C	The main contractor and co-ordinator of the project. Telespazio, a FINMECCANICA company, is a telecommunications and IT applications service provider well known all over Europe. It has developed the DFTM system for TEN Telecom (which can be thought of as a preliminary to GIFTS), and is one of the leading companies in the development of the European GALILEO programme. It was responsible for the GIFTS architecture development, as well as for the overall development of the GIFTS Integrated Platform.
Thomas Miller & Co. Ltd	GB	P	A major UK insurance provider in the transport sector, which manages the TTClub, the UK P&I Club and ITIC. Through the TT Club, it is a shareholder in bolero.net, the global e-commerce services provider to the logistics industry. Th. Miller was principally involved in determining the functionality of the e-commerce elements. It was responsible for Pilot 3 involving a range of companies routinely working in end-to-end intermodal transportation. It participated in the measurement/collection of data from the pilots, in the dissemination/exploitation of results, in defining with DITS strategic goals for the future development of the GIFTS system and produced a Business Plan related to the introduction of the GIFTS concepts.
Hellenic Institute of Transport	GR	P	The National Institute of Transport of Greece. This specialized research Institute, which did not participate directly in any development work, was principally involved in Evaluation and Validation work.

Company	Country	Role	Role description
Alcatel-Bell Space	B	P	A major software and internet service provider in Belgium. It participated primarily in software development for the complex systems of the GIP platform, and the generic interfaces that provided authentication, and customization functions, of GIFTS. In GIFTS, Alcatel-Bell Space first contributed to the definition of the demonstrator by translating the GIFTS enterprise goal related to the services offered to customers into an Information model, leading towards the definition of the computational model.
TREDIT S.A.	GR	P	A major Consulting firm in Greece, with extensive experience in Transport research programmes. They were responsible for the implementation and operation of the Pilot 2 corridors. They also co-ordinated the work for the GIFTS administration functions, including development of certain interfaces, and the order processing software.
Dipartimento di Idraulica, Trasporti, Strade	I	P	DITS is the chair of Transport Engineering at University of Rome. This is the only academic Institution in the GIFTS consortium. DITS role in GIFTS was basically related to evaluation and dissemination/exploitation activities. DITS has been leader of evaluation in many EU transport and telematic projects in both DG TREN and DG INFSO (e.g. CAPITALS, CAPITALS PLUS). It has been a partner in the leading evaluation and dissemination transport projects funded by the EC (e.g. MAESTRO, FANTASIE, EXTRA, PORTAL). This experience was utilised to great effect in GIFTS evaluation/dissemination activities, where DITS was the task leader, in data collection for evaluation and would participate in evaluation methodology development and application, user needs analysis and dissemination/exploitation activities.
PTV Planung Transport Verkehr A.G.	D	P	A major German Consultancy in the field of Transport, and related services with extensive experience in EU-funded research projects. PTV was mainly responsible for the Operational aspects (i.e. applications) of the GIFTS Platform (e.g Tracking and Tracing, Fleet Management, route guidance, etc) and also assisted in the creation of the required GIFTS interfaces to these systems.
PROODOS S.A.	GR	P	(50% owned by the KUHNE & NAGEL group, Germany) and is the biggest forwarding and freight transport operator in Greece and S.E. Europe with a annual turnover of nearly 30 billion drcs (approx. 100 million EURO). This company provided the sites and other facilities for Pilot 1 which was also named as PKN Pilot (from the Proodos/Kuhne Nagel initials).

C = Coordinator, P - Principal contractor, S – Sub-contractor

6 Project results and achievements

6.1 Technical Achievements

6.1.1 Development of Novel Services

Project's actual outcome

GIFTS was designed and developed as an open-access Internet portal/e-marketplace providing services to the logistics and freight transport industry in the EU. Its main goal was to boost competition in the freight transport market by providing high-technology services to small and medium-sized enterprises (SMEs).

The transport and logistics industry remains largely under-developed in both technology and communications, principally as a result of the small margins prevalent in the sectors, but also because technologies or software facilities become obsolete quickly. GIFTS constitutes an efficient new way to match buyers and suppliers. Thanks to reduced costs of searching for potential business partners, SME operators and users can enjoy, through GIFTS, more efficient markets as well as the ability to access high-technology services at lower cost.

GIFTS developed a platform of services with a web-based architecture to operate as a single integrated service along and across the entire supply chain. Its three components are:

- *A navigation system*, involving GPS (Global Positioning System) and EGNOS (European Geostationary Navigation Overlay Satellite system).
- *A communication system*, involving wireless technology, such as GPS, ORBCOMM, GPRS and SUMTS (satellite UMTS), and wired technology, such as Internet/PSTN.
- *An information system*, providing services and using the communication and navigation systems between users' systems and the GIFTS platform.

All the operators and users in the logistics and freight transport industry are potential customers of GIFTS:

- *Transport Operators* (freight forwarders and carriers);
- *Consignors/Consignees* (shippers, distributors, manufacturers, end users);
- *Authorities* (Customs, ports and administrative bodies); and
- *Financial Services Operators* (banks and insurance companies).

A User Needs Analysis (UNA) was conducted. After a review of the extensive work already done in the EU and US to identify common user needs in logistics and freight transport, interviews with potential European GIFTS customers helped to pinpoint their specific needs.

The literature review revealed that the level of Information and Communication Technology (ICT) penetration in the freight transport industry was very low as a result of concerns about cost, security and compatibility. Users will be satisfied by ICT only when it is:

- interconnected, interoperable and integrated with existing and future systems;
- handled by means of proper interfaces;
- standards-based; and
- cheap to acquire and manage.

The interviews highlighted the need to simplify complex administrative procedures for the operators through

paperless administration methods to reduce complex paperwork, human errors and effort, and thereby overall costs. They also stressed the need for security in the exchange of information.

Both the literature review and the interviews highlighted the industry's need for advanced customer service through the provision of added-value information and communication services, such as:

- real-time status reports with information on vehicle/cargo position (tracking and tracing);
- estimated shipment time of arrival (fleet management);
- timely and accurate information provision;
- availability of data for statistical interpretation to provide performance measures; and
- planning and control software applications.

On the basis of the identified needs, the GIFTS platform has been designed and implemented as a “one-stopshop” Internet portal, where members can buy a complete set of high-technology services to monitor their activities.

The three main categories of services provided are:

- *Administrative services* (communications services, security management, message handling, accounting and billing; E-payment; GIS service).
- *Freight transport and operational monitoring and control functions*, including fleet management; tracking and tracing; and cargo matching.
- *E-Commerce services*, including ships' supply tracking; cargo transport tendering; cargo insurance; and EDI/EDIFACT service (for all document output).

To provide the services to all customers, regardless of their current information system, GIFTS provides all the software interfaces needed for access from the users' systems, together with all the necessary databases. All incoming and outgoing messages are transformed into a generic XML format and stored in a database.

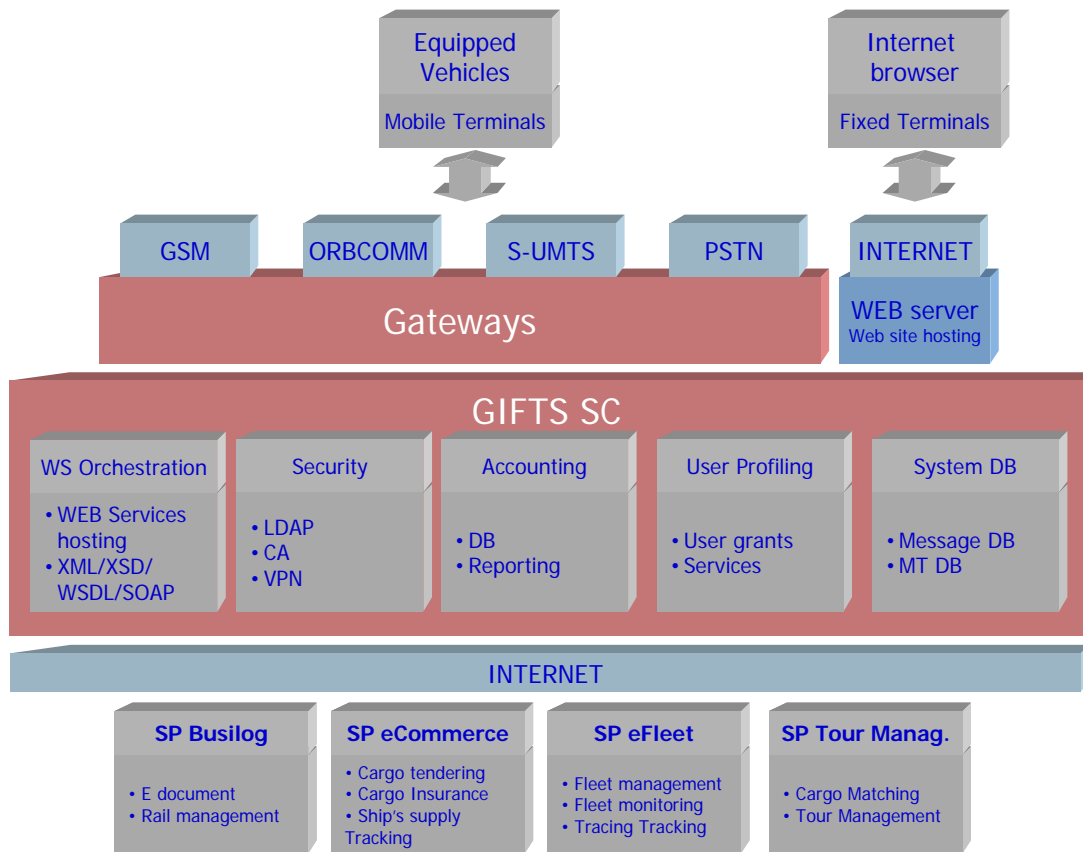


Figure 4 The GIFTS platform architecture

6.1.2 The GIFTS Demonstrator and the pilots

To validate the entire system GIFTS designed three pilot projects to test the platform under real working conditions. To conduct the pilots GIFTS developed an innovative concept system, named Demonstrator, which is a physical system implementing most of the GIFTS platform services for the actors (transport operators, service providers and users) involved in the pilot projects.

The Demonstrator is composed of two main sub-systems: the *GIFTS Integrated operational Platform (GIP)* and the *GIFTS Mobile Terminal (MT)*.

Implementation of GIFTS Platform

Its architecture (*Figure 4*) is modular and has been set up by adopting the WEB Services technology (i.e. operations that are network-accessible through standardised XML messaging).

GIFTS adopted the XML native standard for exchanging messages and is highly interoperable, meaning that the system will be able to interface external applications independently of hardware or software platform or programming language.

Through its components GIFTS implements a set of services divided into the three categories of Administrative Services, Freight transport and operational monitoring and control functions and E-Commerce services.

The GIP component implements a set of applications and infrastructures by means of its three main sub-systems: the GIFTS Service Centre (SC), the Fixed Terminal, and the Service Provider (SP).

The *GIFTS Service Centre (SC)* is a physical system providing Administrative Services (Communication Services, Security Management, Message Handling, Accounting & Billing, e-payment, GIS service) and constitutes a single point of access to the GIFTS services for the User.

The *Fixed Terminal (FT)*, together with the *Mobile Terminal (MT)*, constitutes the User Terminal, through which the user will access the GIFTS system. The FT consists of a commercial PC equipped with a standard Internet browser and with a PSTN interface for accessing the Internet network from a fixed place (e.g. a Transport Operator office).

The *Service Provider (SP)*, a specialized platform to provide a set of services, enables host access to one or more specific Service Modules (SM), which are software objects providing dedicated applications and a specific XML-based interface to invoke them. Four SPs have been designed and implemented in the GIP:

- *e-Fleet SP*, to provide mainly the Fleet Management, the Fleet Monitoring and the Tracking and Tracing services;
- *Tour Management SP*, to provide the Tour Management and the Cargo Matching service;
- *Busilog SP*, to provide the EDocument Management and the Rail Management service;
- *E-Commerce SP*, to provide the Ships' supply tracking, the Cargo-transport contract tendering and the Cargo insurance services.

GIFTS Mobile Terminal

The second main component of the GIFTS system is the Mobile Terminal (MT), consisting of a portable processing unit equipped with communication and navigation components, over which the GIFTS application software is installed. Two types of Mobile Terminal are developed:

- *MT/1 "light"*, which is GSM/GPS technology-based. Installed on commercial vehicles (e.g. trucks), it allows the communication of data for Tracking and Tracing, Fleet Management and Cargo Matching;
- *MT/2 "heavy"*, a research prototype over which GPRS and satellites communicators are installed as well as an S-UMTS emulator and an EGNOS receiver.

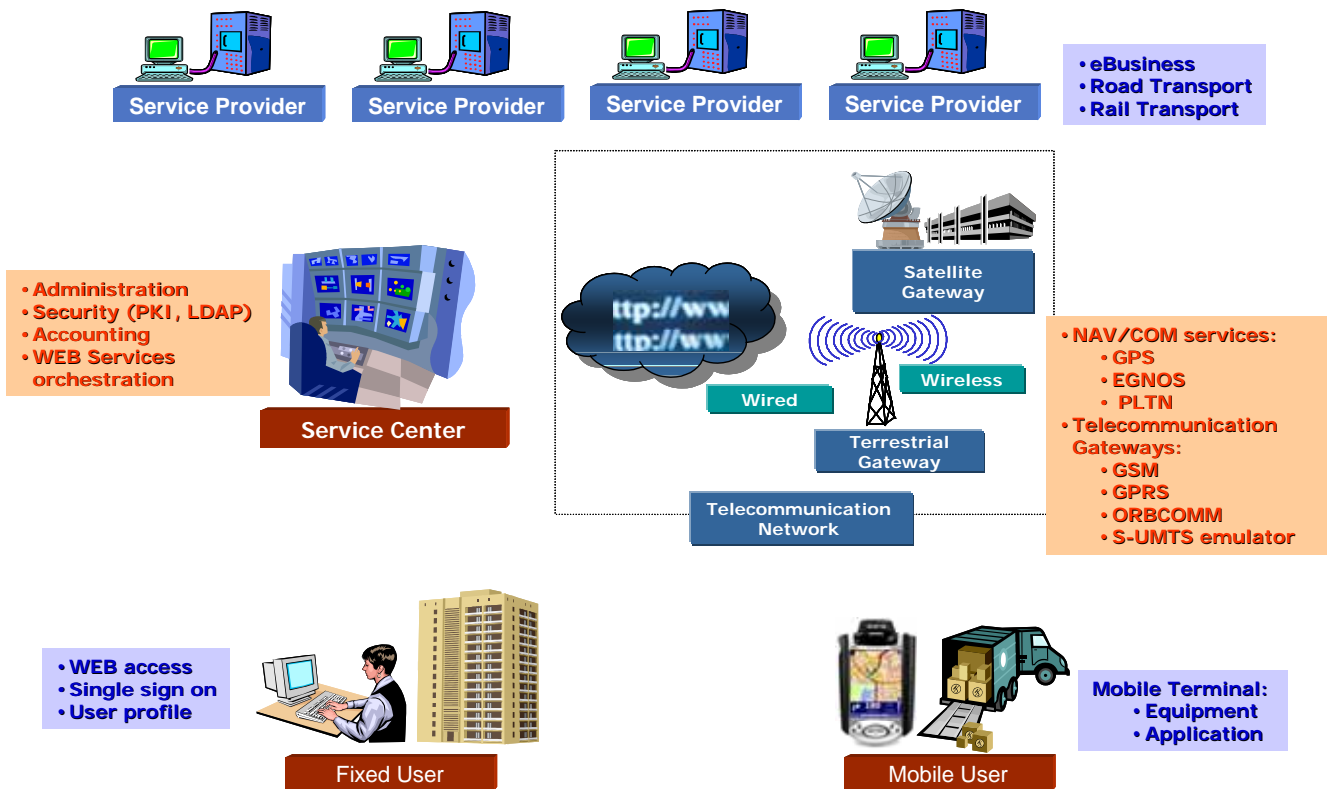


Figure 5 The GIFTS components

GIFTS pilots

To test and validate the GIFTS system prototype, the GIFTS Demonstrator, three pilots were conducted:

- Pilot 1: Road freight transportation.
- Pilot 2: Rail freight transportation.
- Pilot 3: E-Commerce simulation.

The first pilot project demonstrated how the GIFTS system supports a door-to-door road movement. The second demonstrated how GIFTS can assist rail transport with consolidation of wagons, full train preparation and delivery to final terminal. The third pilot investigated, through a qualitative simulation process, the potential of GIFTS E-Commerce services to be provided to the transport industry in conjunction with suppliers of Internet-based services.

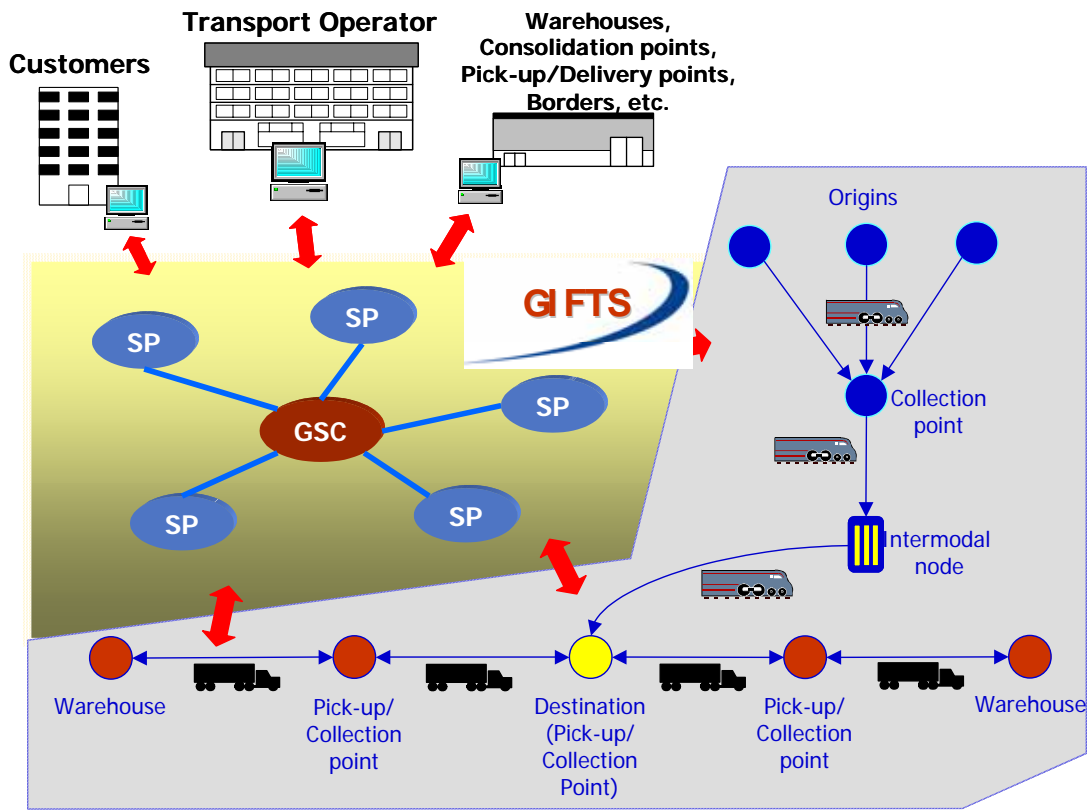


Figure 6 GIFTS overall trials scenario.

The Demonstrator services

The Demonstrator implemented a set of applications to support the operations during the pilots. Since the GIFTS Demonstrator was finalized, it is possible to describe the actual list of applications.

The applications provided implement a set of services divided into four main Service Areas:

- Administration
- Business
- Road Transport
- Rail Transport



Figure 7 The GIFTS Services access page on the WEB

Each service area includes one or more applications the user can run to conduct business operations. The entire set of services, applications and operations is described below.

Service Area	Administration
Application	User profile
Operations	<p>Add User. This service allows the addition of a new user, defining a User ID and a Password. It is possible to select a role: Administration User, Road User, eCommerce User, Rail User.</p> <p>Search User. This service allowsthe search of a User within the registered users.</p>
Application	Accounting
Operations	Accounting. This service allowsthe visualisation of ATR files
Application	Logging
Operations	Logging. This service allows the visualisation of Logfiles.

Service Area	eBusiness
Application	eDocument
Operations	<p>Incoming Message. <i>New Messages.</i> Successfully received and parsed messages (unread messages) are handled in this area. The user can browse these in web forms and retrieve the related information in XML based format. <i>Previous Messages Management.</i> The processing status of each one of past documents is monitored by this service. All the procedures (reception, parsing, conversion, submission) through the lifetime of each message are logged and presented to the end user.</p> <p>Outgoing Message <i>Create New Message.</i> In this entity the user has the possibility to formulate electronic documents and then submit them to an authorized recipient. The message created can be stored in XML format to the local (client's) system whereas reports can be created for additional reference. <i>Previous Message Management.</i> Past and new messages processing status can be viewed by this service. All the procedures (reception, parsing, conversion, submission) through the lifetime of each message are logged and presented to the end user whereas the complete message can be reviewed for reference.</p>
Application	eCommerce
Operations	<p>Ship Supply Tracking. In conjunction with GIFTS, ShipServ have built an extended set of services, "WebLogistics", which allows ordered goods to be tracked through the delivery chain from supplier to ship via multiple intermediate delivery points. The GIFTS interface to ShipServ is designed so that GIFTS users who play a role in this delivery chain (i.e. logistics providers, freight forwarders, transport operators) can use the WebLogistics tools to gain efficiency improvements and provide a higher level of service to their customers. The new WebLogistics tools provide the following:</p> <ul style="list-style-type: none"> - Notification of incoming shipments - Creation of receipt notifications - Management of "in-stock" status at intermediate storage points - Creation of composite outbound shipments (i.e. consolidation of multiple orders or received shipments into a single outbound shipment) - Receipt of "next stage" shipment instructions - Creation of shipment notifications (to next party in the chain) <p>Cargo Transport Tendering. This service is provided in conjunction with Freight Traders. GIFTS users can construct tenders, which are then electronically transmitted to Freight Traders, where the tenders are mounted on their platform. Completed bids are then transmitted to GIFTS where they can be viewed online. Within this service package GIFTS has implemented the following transactions and processes:</p> <ul style="list-style-type: none"> - Tender creation and edit - Route creation and edit - Association of routes with tenders - Tender submission - Bid receipt - View bids (by bidder and by route)

Service Area	eBusiness
	<p>Cargo Insurance. This service is provided in conjunction with CNA. Their "OMMni" internet service allows users to carry out the complete process of insuring cargoes online. By means of a fully interactive XML-based web-services interface between the GIFTS and OMMni systems, GIFTS users can obtain quotes and purchase insurance immediately via a credit card transaction. GIFTS has developed interfaces to a representative sample of OMMni services which best correspond with the needs of <i>ad hoc</i> insurance quotations and purchase. The following transactions and processes are supported:</p> <ul style="list-style-type: none"> - User Registration - User Login - Insurance Quotation - Insurance Purchase (using credit card) - Certificate Print - Edit Draft Certificate - Search for pre-existing Certificates (on multiple categories)

Service Area	Road Transport
Application	Tour Management
Operations	<p>Tour Dispatch. The user through the tour dispatch functionality can combine available transport orders into tours, define the order in which the tour stops will be performed and send a message to the driver containing that information.</p>
	<p>Tour Update. This functionality is for updating existing tours. It allows the addition or removal of transport orders from existing tours.</p>
	<p>Tour Monitoring. Using the tour monitoring functionality, the user can keep track of the status of any tour and the respective transport orders either by requesting status updates at various times or through the status report messages that each driver sends when arriving at stop points.</p>
	<p>Cargo Matching. The cargo matching functionality can help GIFTS users find if there is any existing tour that can satisfy transport needs for small amounts of cargo that cannot be combined into tours.</p>
Application	Fleet Management
Operations	<p>Position Reporting. This service retrieves the stored positions of one vehicle of the user's fleet from the internal database. The result can be visualized textually, in tabular form, or on a map.</p>
	<p>Vehicle Locator. This service offers both functionalities, the activation of the continuous transmission of the fleet units' position and velocity with timestamp (PVT), as well as the single polling of the fleet units' actual PVT information. The position of the vehicles may be visualised on a map.</p>
	<p>Radial POI Search. This service is needed for searching Points Of Interest (POIs, e.g. petrol station, restaurant, frontier crossing, hotel) within a certain distance from a vehicle or from an address to be specified. The found POIs are displayed in tabular form, or on a map.</p>
	<p>Tour Overview. With this service a data retrieval on tours being serviced within a certain period of time may be carried out. The tours are visualised in a list, with their actual status, or in a map.</p>
	<p>ETA (Estimated Time of Arrival). Taking the last known position of the vehicle as one input parameter and the stops of the tour as further input parameters, the Estimated Time of Arrival (ETA) to the forthcoming tour-stops is calculated.</p>
	<p>Vehicle Search. The purpose of this service is finding the vehicles within a certain distance of a specified address, regardless of their actual transport and loading status. This may be useful if the address belongs to a customer requiring a transport service. The search radius may be set as needed. The found vehicles are displayed in tabular form, or on a map.</p>
	<p>Corridor POI Search. This service searches for POIs (e.g. petrol station, restaurant, frontier crossing, hotel) along a route between a given start and destination address or on the basis of a tour's stops. POIs are displayed in tabular form, or on a map.</p>
	<p>Tour Detailed View. A more detailed view on a particular tour is provided in this service. The tour stops are listed with the planned times of arrival, the order ID and the order status. The tour may be visualised graphically in a map.</p>
	<p>Data Evaluation. Operational data on concluded transports, which are stored in the internal database, may be analysed with a reporting tool as a post-processing functionality, e.g. for determining the time needed for carrying out a particular transport operation.</p>

Service Area	Road Transport
	Map. This service allows the visualisation on maps all information related to the Fleet Management service, e.g. POIs, tours, position of vehicles.

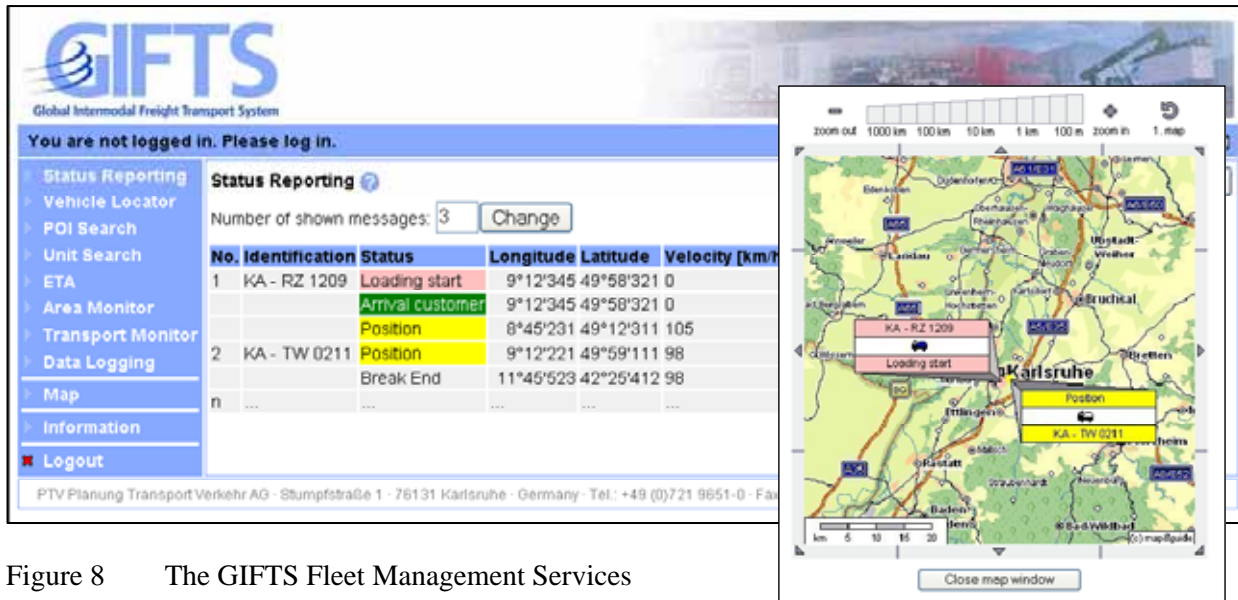


Figure 8 The GIFTS Fleet Management Services

Service Area	Rail Transport
Application	Transport Planning
Operations	Shipment Management. This entity covers all issues regarding shipment-related information management. This includes information such as wagon's weight, number, shipment, muster registration etc, providing interfaces via which all wagon-associated information can be handled in a serialized way.
	Train Management. This entity is referred to the information regarding trains and their surveillance through their arrival at stations. It also allows the user to compose a train according to various criteria such as wagon destination or weight and length constraints. Trains which have already been consisted can be searched and updated through a series of interfaces and search forms.
	Wagon Management. A series of interfaces aids the user in registering data of an individual wagon or searching through registered wagons according to user level in order to find position-related information (e.g. designated route, dispatch, designation station), composition history etc.
Application	Transport Monitoring
Operations	Wagon Checking. This service provides for registration of arrival and departure of wagons through stations via a series of specialized interfaces. If the train is registered in its final destination, a sequence of actions occurs in order to decompose the train and "re-insert" its individual wagons in the station.
	Train Checking. This service provides for registration of arrival and departure of trains through stations via a series of specialized interfaces. If the train is registered in its final destination, a sequence of actions occurs in order to decompose the train and "re-insert" its individual wagons in the station.

6.2 Technical Assessment

6.2.1 Innovations

GIFTS has been a challenging project which aimed to bring novel technologies into freight transport ITS.

During its three-year life cycle a permanent observatory of state-of-the-art technologies has been set up allowing the adoption of real up-to-date and innovative technical solutions such as:

- Modular and distributed architecture by adopting Web services and CORBA technologies standards.
- Advanced communication technologies: S-UMTS for low bit rate LBS; Satellites communicators; terrestrial mobile networks.
- Advanced navigation technologies: EGNOS, GPS augmentation as a step towards Galileo services.
- Up-to-date mobile terminal devices equipped with navigation receivers, Windows mobile O.S., GPRS, and satellite communications modules, bluetooth etc..

From the adoption of the technical solutions mentioned above, significant added values have been derived, such as:

- A growing services portfolio, where the modularity of the platform allows the enhancement and the integration of the provided services with new applications, thanks to the adoption of WEB Services/XML Standards defined in the project and to the efforts made for assuring an high degree of middleware interoperability.
- Easy access, because the services are offered via the Internet, and can be accessed by means of a PC with a standard browser and with an Internet connection. No software updates are required of the customers; they are all to the responsibility of the GIFTS Platform.
- System Security aspects, such as:
 - i. Certification Authority: the GSC releases a GIFTS certificate for users and Service Providers.
 - ii. Single Sign On: the same username/password valid through all the system.
 - iii. User profiling: each user has a unique profile with its subscribed services.
 - iv. VPN: for the secure and crypt communication between the GIFTS components (GSC and SP).

An innovative feature of the GIFTS system is the general secure environment implemented to address the fundamental goals of *Authentication* (customers must be confident they are doing business with and sending private information to a real entity without spoofing), *Authorization* (customers must access only the services for which they have rights), *Confidentiality* (sensitive communications and transactions must be kept private), *Data Integrity* (communications must be protected from undetectable alteration by third parties when transmitted on the Internet), and *Non-Repudiation* (it should be possible for a sender to reasonably claim that he or she did not send a secured communication or information).

6.2.2 Contribution to Standardisation

GIFTS results and outputs provides significant contribution to common programme objectives as a result of the advanced technologies implemented by the GIFTS demonstrator on a real scenario.

For the development of the architectural specifications, the consortium has drawn from the Multimodal Freight Functional Framework (FFF), recently produced in the context of the THEMIS project. The Framework consists of functions and information flows covering the majority of multimodal freight transport activities. The primary objective of this architecture work is to enable the platform to integrate the freight and traffic sectors. FFF is the result of an extensive review and analysis of past and recent freight projects with an architectural dimension.

The possibility of facilitating and speeding up the standardisation process around satellite-UMTS has been enhanced through the GIFTS project by means of the implementation of a UMTS emulator as communication equipment on its mobile terminal. GIFTS conveyed its results and its recommendations to the UMTS standardisation body for consideration and assessment.

As most of the leading European companies working in the area of mobile and satellite communications joined the GIFTS consortium, the GIFTS demonstrator could be regarded as a common platform for developing integrated navigation and communication services, proposing technical solutions and providing input to standards.

6.3 Economic And Related Marketing Assessment

6.3.1 Usefulness Of The GIFTS Service

The interviews survey carried out during the User Needs analysis phase pointed out the identification of new “roles” in the transport chain. Many respondents performed more than one role in a transport operation; competition is much dependent on the provision of added-value services to the customers; and the low level of IT penetration particularly for carriers / freight forwarders where many functions are still performed manually was noted; there is a lack in adopting positioning systems; and most communications are based on mobile voice exchange (GSM) .

GIFTS aimed to provide a comprehensive catalogue of services to the transport and logistics industry, while also addressing the needs of the administrative, managerial and physical movement and storage activities associated with these sectors.

The principal business concept behind GIFTS is to improve the end-to-end provision of customers’ orders for cargo movement, cargo documentation, administrative activity and, most important in today’s world, the security and monitoring of the cargo, the carriers and the personnel involved.

GIFTS supports door-to-door freight transport in an intermodal as well as unimodal sense. Opportunities were provided by European Union Directives regarding the governing condition and access to the rail network.

Rail infrastructure and transport services will be managed by different entities, allowing SME operators to participate jointly in tenders for implementing a freight transport service on a rail corridor. This will facilitate the practice of intermodal freight transport, and GIFTS represents a valid instrument to achieve high quality and low cost service provision.

To summarize, GIFTS aimed to develop a one-stopshop portal for its potential customers, which are:

- **transport operators** (freight forwarders and carriers), providing them with access to relevant transport information and to accelerate transport documentation exchange;
- **consignors/consignees**, providing them with access to information about the transportation of their cargoes;

- **authorities** (Customs, ports and administrative bodies), providing them with the opportunity to interact with other users of the platform and exchange information and transport-related documentation;
- **financial services** (banks and insurance companies), providing them with an e-marketplace for their products, enabling them to provide bespoke services to the freight transport industry; and
- **manufacturers and distributors**, by building awareness of the facilities available to their carriers.

The improvements envisaged for such customers include:

- reductions in inventory due to shorter lead times;
- reductions in losses due to fraud or lack of adequate control;
- improved use of resources at all levels of the supply chain;
- greatly improved information, in real time, along the length of the supply chain corridors; and
- improvement in security and safety procedures.

Besides these aspects, application providers can find in GIFTS an opportunity to reach new users by integrating their services into the platform.

6.3.2 Conclusions on pilot evaluation and validation results

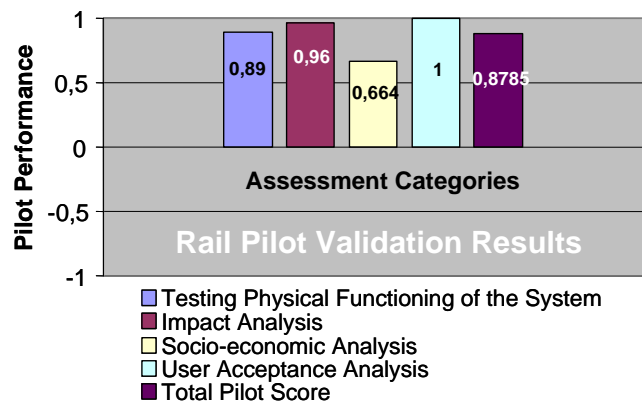
Based on the results of the pilot trials the following conclusions can be drawn.

The levels of success of road and rail pilots –in total for all assessment categories- were indeed very good, being respectively 82,3% and 83,8%. Also both pilots performed at almost the same level, which secured the individual pilots' results.

The figure on the right shows the Rail Pilot Validation Results with the performance scored for each assessment categories which are also listed.

Regarding the assessment category “Testing the physical functioning of the system”, both pilots scored very highly (respectively 0,825 and 0,89). This assessment category was the most basic level of assessment for such a project since it determines the technical parameters of the GIFTS system performance. The results from the technical evaluation were very positive for the GIFTS system since they indicate:

- a) that the GIFTS system meets all the technical requirements and the expected objectives set at the beginning of the projects;and
- b) that the GIFTS system indeed merited the further assessment done (impact assessment, socio-economic evaluation etc.).



Another positive result from the evaluation and validation process, was that in “User Acceptance Analysis” both pilots achieved the highest possible score (1), which indicated a level of 100% success as it concerned user acceptance of the system. Therefore, users’ attitudes to and perception of the GIFTS application were very positive.

In both pilots the “Impact Analysis” results indicated that the effects of the GIFTS application were also very positive. Especially in the case of impacts where a “before-and-after GIFTS” comparison existed.

In socio-economic analysis both pilots (road and rail) scored well but not as well as in the other assessment categories. This did not necessarily mean that the “social” gains as the result of implementing GIFTS applications are unsatisfactory because the mediocre results of the pilots in this assessment category are doubtful, since they occurred as a result of missing data (cost estimations) and not as a result of the data collected during the trials.

Finally, regarding the E-commerce pilot, it seems that users found the GIFTS portal, very useful and beneficial from the business point of view as well as easy to use and effective. In general the overall performance of Ecommerce pilot could be characterised as very good with minor required modifications as suggested by the users.

6.4 Market Studies

6.4.1 Overview And Study Assumptions

The growth of freight transport shows a strong trend for the short and medium term that cannot be met by existing infrastructures and management tools. Most freight transport is road-based and causes considerable social and environmental impacts. Intermodal transport could represent a sustainable solution for freight transport across Europe, but lack of flexibility and a number of bottlenecks in the intermodal chain, mainly the terminals, limit its ability to compete against road-only, especially for short and medium distances.

Improvements in operations within the supply chain and intermodal terminals are made possible by means of telematics, able to allow both the completion of transport services supply and the practice of transport services more efficiently and cheaply. A new freight transport concept is closely linked to the use of telematics for the management of deliveries and in the intensive use of automated and computerised means for treatment, sorting, storage and picking of freight.

The market analysis undertaken by the GIFTS consortium has necessarily been comprehensive, firstly to understand the current practices, processes and procedures in the freight transport industry generally and secondly to make a practical market segmentation to identify where the GIFTS services will have most impact and most benefit and which party in the supply chain will pay for them.

6.4.2 Summary Of Main Results

The market analysis covers the current and developing market for freight service portals and its evaluation. It is anticipated that, even allowing for the proportion of this market which will be delivered by connected ERPs and industry specific solutions, it represents one of the major revenue sources for systems developments over the next five years. This statement points to the need for those who undertake the commercialisation of GIFTS not to miss the window of opportunity currently available in the market.

In evaluating the individual results developed during the course of the project the consortium believes that companies in the road haulage and the rail sectors could well be the target market for the initial commercial offering. The ability of the driver in the cab to communicate with his office using the fixed and mobile terminals equipped with the tour management software to set up, monitor and update tours or round delivery trips is an essential precursor to a range of functionalities needed in the road haulage industry which GIFTS could provide, including road user tolling.

The European rail industry where new, mostly private companies have had the right since March 2003 to compete with traditional operators on cross-border rail freight on the main trans-European routes is experiencing some fundamental changes as a result of the introduction of competition. Tools such as the transport chain management and monitoring system in the GIFTS BusiLog SMP, in collaboration with the electronic document system, enable whole trains to be consisted in a centralised and more efficient manner.

Combining the transport characteristics (planning) with dynamic transport chain activities, the operator has the opportunity to plan or even re-plan the train journey from origin to destination.

Such flexibility and diverse use of the platform would be key to the marketing and commercialisation of GIFTS, as it aligns closely with the attitude and tradition of operators in the freight transport industry. There are those who would wish to communicate and exchange data electronically whilst transporting goods intermodally but there are many who would not wish to share data in this way. GIFTS might well provide the opportunity for operators to ease themselves into the modern era of electronic data capture and transfer at their own speed; the first step might be to use GIFTS for their own business (intra-company); and the next step would be to use GIFTS to communicate with their fellow operators in the supply chain (inter-company). The freight transport industry has been slow to move into the electronic era; perhaps GIFTS might be the enabling tool to achieve this end, whilst increasing efficiency and profitability in the industry at the same time.

Market figure estimation at European level

With reference to the market analysis performed during the project, the target market for a reliable GIFTS business case has been identified with the Transport Assets for Tractor/Trailer Management (land-based tractors and trailers) and Rail Management.

The estimated size of the European potential market (EU 15) expressed in terms of number of unit/means of transport is reported in the following table and figure (sources: projection based on Eurostat data <http://epp.eurostat.ec.eu.int/portal>).

The reference period considered for the financial assessment is from 2005 to 2008.

BP-D1: AVAILABLE MARKET EU 15

Professional Market		1999	2000	2001	2002	2003	2004
	ROAD (Lorries)	2.614.846	2.697.093	2.779.340	2.859.808	2.942.926	3.028.376
	RAIL (Wagons)	517.000	512.000	507.000	502.000	497.000	492.000
TOTAL (units)		2.614.846	2.697.093	2.779.340	2.859.808	2.942.926	3.028.376

Professional Market		2005	2006	2007	2008
	ROAD (Lorries)	3.116.086	3.206.060	3.298.325	3.392.923
	RAIL (Wagons)	487.000	482.000	477.000	472.000
TOTAL (units)		3.116.086	3.206.060	3.298.325	3.392.923

Table 1: EU15 estimated no. of users (units of means of transport)

For the Road sector the number of lorries with load capacity above 5tons have been considered. For the Rail sector has been considered the number of wagons (wagons, high-sided wagons, flat wagons, covered wagons and other wagons).

7 Deliverables and References

7.1 Project Deliverables

ID	Title	Document Number	Issue	Date
-	GIFTS Contract Annex I - "Description of work"	IST-2000-29364-Annex I		02/03/2001
D00	Project Management Plan	GIFTS/PLN/D00	1	30/11/2001
D01	Project Presentation	GIFTS/PRS/D01	1	03/12/2001
D02	Risk Assessment Plan	GIFTS/PLN/D02	1.1	20/12/2002
D03	User Needs Identification and Analysis	GIFTS/REP/D03	1	12/02/2002
D04	Demonstrator Architecture Design	GIFTS/REP/D04	1	07/08/2002
D05.	GIFTS Service Centre Design	GIFTS/REP/D05	1.1	20/12/2002
D05.A1	Annex 1 - GSC modules Design	GIFTS/REP/D05.A1	1.1	20/12/2002
D05.A2	Annex 2 - SMP e-fleet design	GIFTS/REP/D05.A2	1.1	20/12/2002
D05.A3	Annex 3 - SMP e-business design	GIFTS/REP/D05.A3	1.2	20/05/2003
D05.A4	Annex 4 - SMP Cargo matching design	GIFTS/REP/D05.A4	1.2	20/05/2003
D05.A5	Annex 5 - ICD (Interface Control Document) GSC-SMPs	GIFTS/REP/D05.A5	1.2	20/05/2003
D06	GIFTS Integrated Platform AIT Plan	GIFTS/REP/D06	1.1	20/12/2002
D07	E-commerce Design Report	GIFTS/REP/D07	1.0	30/09/2002
D08	Internal Billing Function Design	GIFTS/REP/D08	1.0	30/09/2002
D09	GIFTS User Terminal Design	GIFTS/REP/D09	1.0	20/12/2002
D10	GIFTS User Terminal AIT Plan	GIFTS/REP/D10	1.0	20/12/2002
D11	GIFTS Demonstrator AIT Plan	GIFTS/REP/D11	1.0	18/07/2003
D12, 13, 14	GIFTS Demonstrator Equipment	N/A	-	-
D15	User Terminal Manual	GIFTS/REP/D15	1.0	02/03/2004
D16	GIFTS Demonstrator AIT Results	GIFTS/REP/D16	1.0	22/01/2004
D17	Pilot Projects: Validation plan	GIFTS/REP/D17	1.0	27/02/2004
D18	Pilot 3 End-to-End E-commerce function	GIFTS/REP/D18	1.0	27/02/2004
D19	GIFTS Evaluation Data Capture Mechanism	GIFTS/REP/D19	1.0	08/06/2004

ID	Title	Document Number	Issue	Date
D20	Evaluation report	GIFTS/REP/D20	1.0	12/10/2004
D21	Concertation and Clustering plan	GIFTS/REP/D21	1.0	28/03/2002
D22	Dissemination and Use Plan	GIFTS/REP/D22	1.0	26/07/2002
D23.1	Newsletter	GIFTS/NL1	-	April 2002
D23.2	Newsletter	GIFTS/NL2	-	October 2002
D23.3	Newsletter	GIFTS/NL3	-	October 2002
D23.4	Newsletter	GIFTS/NL4	-	April 2004
D24	Exploitation Plan & TIP	GIFTS/REP/D24	1.0	12/10/2004
D25	GIFTS Business Plan	GIFTS/REP/D25	1.0	12/10/2004
QPR1	Quarterly Progress Report	GIFTS/TPZ/ QPR1	-	21/12/2001
QPR2	Quarterly Progress Report	GIFTS/TPZ/ QPR2	-	26/03/2002
QPR3	Quarterly Progress Report	GIFTS/TPZ/ QPR3	-	23/07/2002
QPR4	Quarterly Progress Report	GIFTS/TPZ/ QPR4	-	04/10/2002
QPR5	Quarterly Progress Report	GIFTS/TPZ/ QPR5	-	31/01/2003
QPR6	Quarterly Progress Report	GIFTS/TPZ/ QPR6	-	29/04/2003
QPR7	Quarterly Progress Report	GIFTS/TPZ/ QPR7	-	07/07/2003
QPR8	Quarterly Progress Report	GIFTS/TPZ/ QPR8	-	03/10/2003
QPR9	Quarterly Progress Report	GIFTS/TPZ/ QPR9	-	16/01/2004
QPR10	Quarterly Progress Report	GIFTS/TPZ/ QPR10	-	16/04/2004
QPR11	Quarterly Progress Report	GIFTS/TPZ/ QPR11	-	06/07/2004
QPR12	Quarterly Progress Report	GIFTS/TPZ/ QPR12	-	13/10/2004

Main internal or public Technical Notes issued during the project :

Object	Conf. Level	ID	Date
Guidelines for a Use Cases approach to User Requirements	I	GIFTS-TPZ-T_N-002-A1	05/03/2002
GSC - SP Interface detailed definition	I	GIFTS-TPZ-T_N-009	08/04/2002
Security on GIFTS Demonstrator	I	GIFTS-TPZ-T_N-023	11/04/2003
GIFTS Administration data model via LDAP	I	GIFTS-TPZ-T_N-029	06/10/2003
ATR – Accounting Transaction Record definition	I	GIFTS-TPZ-T_N-034	21/01/2004
S-UMTS emulator	P	GIFTS-TPZ-T_N-039	18/10/2004

I - internal to the consortium; P - public

7.2 Dissemination and Concertation

In the following, the list of the dissemination and concertation activities performed during the course of the project.

Date and Place	Event	Contribution
23 April 2002, Brussels	THEMIS-FRAME seminar. The second international workshop on freight transportation and logistics: Transportation Network Design, Transportation Network Routing, Distribution Networks, Fleet and Crew Management, Supply Chain Optimisation, Intelligent Transportation Systems for Logistics and Freight Transportation, Terminal Management, Rail Management, Methods and tools for real or quasi real-time decisions for Logistics and Freight Transportation, Methods and tools in the Internet age and links to e-commerce for Logistics and Freight Transportation.	Project presentation and workshop.
12-15 November 2002, Nice, FR	1 st NAVSAT world show Applications and value added services using satellite navigation systems; GALILEO. http://www.navsat-show.com .	Project presentation
20 November 2002, Rome	4th World GIS Day 2002, GIS for local administration, integration of cartographic data . http://www.esriitalia.it/gisday2002/eventi_roma.htm	Project presentation
10-12 December 2002, Rotterdam, The Netherlands	International Logistics Forum - Intermodal Transport & Logistics Conference and Exhibition. Conference for international shippers, logistics companies, ocean and inland carriers and technology providers targeted at: international shippers; international carriers and logistics providers; and providers of technology/systems for international-logistics/transport management.	Project presentation.
22-25 April 2003 Graz, Austria	GNSS 2003 Global Navigation Satellite Systems (GNSS), GPS and Galileo, the integration of navigation procedures and systems (EGNOS, Loran-C), the combination with communication technologies (GSM, UMTS), applications	Project presentation
14 March 2003 Brussels	eThematic Steering Committee, Thematic network examining e-logistics and e-fulfilment. The main goal of E-thematic is clustering research developments in this area. The TN is composed of three clusters, these are: -European Best Practice - EU-US co-operation - technologies and applications.	Project presentation and workshop
27-30 May 2003 Palermo Italy	ODYSSEUS Second International Workshop on Freight Transportation and Logistics. The second international workshop on freight transportation and logistics: Transportation Network Design, Transportation Network Routing, Distribution Networks, Fleet and Crew Management, Supply Chain Optimisation, Intelligent Transportation Systems for Logistics and Freight Transportation, Terminal Management, Rail Management, Methods and tools for real or quasi real-time decisions for Logistics and Freight Transportation, Methods and tools in the Internet age and links to e-commerce for Logistics and Freight Transportation	Project presentation and paper

Date and Place	Event	Contribution
12 September 2003 London	1st GIFTS Work Shop, London	workshop
9 October 2003 Rome	2nd GIFTS Work Shop, Rome.	workshop
19 November 2003, Madrid	10th World Congress Intelligent Transport System and Services FRAME global workshop on ITS Architecture.	Project presentation
4-6 November 2003 Ahoy, Rotterdam	Intermodal Transport & Logistics 2003, Bridging the Gap Between Logistics and Intermodality.	Project presentation
24 - 26 May 2004 Budapest	ITS Europe Congress and Exhibition, Budapest.	Project presentation
19 October 2004	article published on IST Results http://istresults.cordis.lu//index.cfm?section=news&tpl=article&ID=70380	article

7.2.1 The GIFTS Workshops

Two one-day workshops were arranged in Autumn 2003 to present GIFTS and to involve local logistics and transport operators in a discussion about the project's potential in the field. The first was on September 12th in London, the second on October 9th in Rome.

London (UK), September 12th 2003

The workshop was particularly focused on Logistics Operators, Freight Forwarders, Shipping Operators, Carriers, Manufacturers, Information Technology Operators, Telecom Companies, Consultancies and e-Commerce Service Providers. A range of functions offered by the GIFTS platform were presented. The London workshop was held in the offices of Thomas Miller & Co Ltd. The morning session provided a range of presentations on the GIFTS project, culminating in one on the GIFTS Business Plan during which the consortium outlined its initial ideas about commercialisation of GIFTS.

Rome (IT), October 9th 2003

The workshop aimed to introduce the GIFTS project and its functionalities, and to explore ways in which Italian logistics operators and SMEs can take advantage of GIFTS service offerings. It was aimed particularly at Logistics operators, Transport operators, Manufacturers, small and medium-sized enterprises, Logistics consultants, and Educational and research institutes.

It was organised by the Dipartimento di Idraulica Trasporti e Strade (DITS), University of Rome "La Sapienza", with the contribution of AILOG, the Italian Logistics and Supply Chain Management association, and Telespazio.

The discussion had focused on the "pros and cons" of the GIFTS platform, with subsequent suggestions for the improvement of the platform.

The workshops gave to the GIFTS consortium useful feedback about the work carried out and constituted a further incentive to focus the project towards the market expectation. The success of the two workshops testified to the growing interest of the market for integrated ITS in the freight transport sector and, particularly, for the solution proposed by GIFTS.

7.2.2 Dissemination Material

The GIFTS consortium has placed strong emphasis on dissemination during all project phases, by producing and distributing videos showing the project activities and results, periodic newsletter (every six-months) and other dissemination material.

Content related to the project has been made available to all interested parties as:

- Newsletter: The first GIFTS Newsletter was published in April 2002 providing information on the project's background, goals and structure. Further issues have been published on a six-monthly basis to provide news on project activities.
- Brochure: a leaflet with the main project information has been created for dissemination purposes
- Video: a ten-minutes video has been made, summarising the project activities and goals with a brief presentation of the project methodology as well as of the three trials.
- Posters: project panels have been printed for use in the main dissemination events (in *Figure 11*)

Newsletters



GIFTS Web-Page: <http://gifts.newapplication.it>

The World Wide Web is presently the most effective and efficient advertising medium. Creating a project dedicated Web site and advertising the GIFTS URL to the Net (registering the web site to the most popular web research engines) allows the documents to be available to a wide audience.

Thus, setting up a GIFTS Home Page has provided many advantages facilitating the dissemination activities through:

- rapid information access;
- low cost of providing information to an additional user;
- low cost of providing timely updates of information;
- low cost of interactivity; and
- wide-scale information diffusion.

The web site content includes:

- general information concerning the project (technical description, team, etc.);
- most recent updated information on the status of the project activities;
- the project deliverable documents;
- presentations and papers which have been produced
- a "Related Links" page, including interesting and useful links to associations, organisations and research institutes, mainly in Europe.

All contents of the site, regularly updated during the project duration, are publicly accessible without authentication, except for the areas which are restricted (such as deliverable documents, meetings presentations and minutes).

The screenshot shows the GIFTS website interface. At the top left is the GIFTS logo with the tagline 'Global Intermodal Freight Transport System'. A navigation bar contains links for Home, about GIFTS, partners, info&links, GIFTS Demonstrator, and login. The 'info&links' menu is expanded, showing sub-links for Newsletters, Dissemination, Contact Us, and Useful links. Below the navigation, a breadcrumb trail reads 'home > info&links > Disseminations' and the date 'March 18, 2005' is displayed. The main heading is 'GIFTS Project Presentations and Papers'. Below this is a table with three columns: Events, Title/Object, and Type.

Events	Title/Object	Type
Navsat 2001	GIFTS4NAVSAT2001	slides, pdf
Leaflet A4	GIFTSLeaflet-A4	pdf
E-Thematic Steering Committee, Brussels 14/03/2003	GIFTS4eThematic	slides, pdf
ODYSSEUS 2003 - second International workshop on Freight Transportation and Logistics - Palermo (I) May 27-30, 2003	GIFTS for Odysseus 2003	paper, pdf
Project Brochure	GIFTS Brochure	pdf
First GIFTS workshop - London September 12, 2003	Programme Slide presentation: the GIFTS project Slide presentation: the eFleet module	pdf
Second GIFTS workshop - Rome October 9, 2003 (italian language)	Programma Presentazione del progetto Presentazione modulo eFleet	pdf
Intermodal Transport & Logistics 2003, Bridging the Gap Between Logistics and Intermodality Ahoy, Rotterdam 4-6 November 2003	GIFTS - ITL 2003	slides, pdf

Figure 9 GIFTS WEB site page

The GIFTS web site has been a common point of contact for both partners involved in the project and external audiences. An e-mail account has been made available for any contacts: gifts@telespazio.it

8 Future Outlook and Conclusions

8.1 Commercial And Market Opportunities

8.1.1 Commercialisation aspects

A typical intermodal door-to-door journey using a shipping container can involve the interaction of approximately 25 different actors, generate 30 – 40 documents, use 2 – 3 different modes and be handled at as many as 12 – 15 physical locations. For eight hours in the air, an air-cargo shipment can spend six days on the ground (*per* IATA). This underlines the major opportunity GIFTS has been designed to improve.

The complex web of people, interactions, movements and information associated with the international movement of goods can be broken down into three principal flows¹:

- The process flow – the physical movement of goods from place to place.
- The financial flow – the transactional movement of custody from person to person.
- The data flow – the movement of information regarding the cargo.

Among the core actors within the supply chain are the buying agents and freight forwarders who serve as the most common intermediaries between originating shippers and the asset owners, the ocean carriers, airlines and even the trucker.

International trade relies upon the secure transmission of key pieces of information among dozens of actors who may never have met. This information includes the specification of the goods to be shipped, the quantity, the number packed onto each pallet and into each container, details about custody/liability, information regarding the timing and responsibility for payment and who is authorised to act on behalf of the shipper, whether consignee or consignor. Each transaction can involve up to 40 separate documents – some of them duplicated (e.g. a forwarder's bill of lading will be duplicated by the ocean carrier's bill of lading). With the increased terrorist risk and a growing awareness of the vulnerability of supply chains, Customs and security agencies rely on this information in order to make informed judgements on which containers to inspect.

GIFTS and its associated portfolio of services are expected ultimately to become global in application, although initial deployment will be in the European Union, with particular focus on south-eastern Europe. Because the GIFTS portfolio of capabilities is expected to be wide-ranging, both in service provision and as to potential users of those services, activities are likely to be divided into separate channels driven by application areas and information service providers for all categories of users.

¹ OECD "Security in Maritime Transport: Risk Factors and Economic Impact" July 2003.

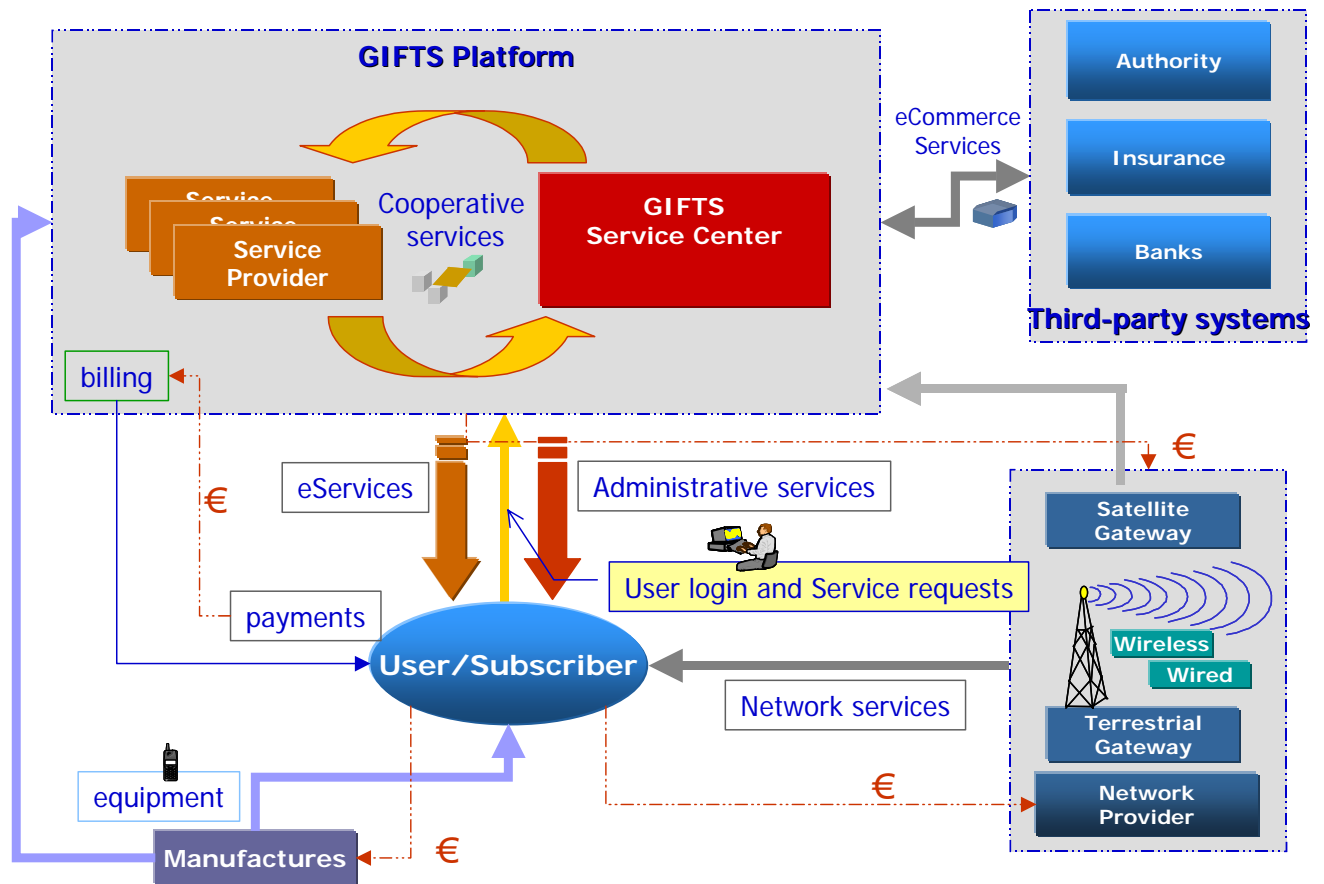


Figure 10 The GIFTS Business Model

The above figure shows the reference Business Model for GIFTS where the Platform is the contact point of the GIFTS system and the users who are subscribers for making use of the services provided. It includes a Service Centre and one or more service provider(s). The Service Centre and service provider(s) are the backbone over which the services are built and relayed to the users. Users access GIFTS services through the service provider(s) to which they subscribe, or directly through the GIFTS Service Centre. The Service Centre is the centralised point of contact for all the service providers who are part of it and is the central repository of updated user and service information.

The institutional entities interact with GIFTS, not only as users, but also to encourage the use and the diffusion of GIFTS services through legal and financial means.

The equipment manufactures are considered external to this Business model, the end user can either buy or rent the needed equipment (i.e. the mobile terminals) directly from them.

8.1.2 Future Scenario

The transport and logistics industry is still largely dependent on paper and fax transmissions and it is not difficult to identify potential savings resulting from more integrated IT systems. Many large manufacturers/shippers have already benefited from increased productivity due to IT improvements in their supply chain. If these were extended to all trading parties – small shippers, forwarders, land and sea carriers, Customs authorities, port and terminal operators – the savings could be significant.

While many in the industry claim that transforming the paper-based chain to an electronic one would be prohibitively expensive, continued decreases in the cost of IT computing equipment and increasing computer literacy worldwide might make such a change feasible sooner rather than later. Users within this industry, particularly Small and Medium-Sized Enterprises (SMEs), are loath to invest in resources, technologies or

software which could be superseded and become obsolete within a very short space of time. It was to overcome this reluctance and to respond to the significant opportunity to enhance international trade that GIFTS was formed.

GIFTS will offer an efficient new way for matching buyers and suppliers, enabling effective communication between those parties. In particular, the reduced costs of searching for potential business partners will lead to more efficient markets. GIFTS aims to provide a comprehensive catalogue of services to the transport and logistics industry, while also addressing the needs of the administrative, managerial and physical movement and storage activities associated with this sector.

8.2 Exploitation Intentions of GIFTS Partners

The GIFTS consortium has identified some thirteen individual results from the research work undertaken during the course of the project. Each result is owned by one or more consortium members who have brought knowledge to the project; developed and refined that knowledge to create a result (whether that is a product or service) which they, either alone or in partnership with others (internal or external to the project), may exploit at some future date. Alternatively, the results may have a commercial interest but the consortium partners do not wish to exploit them, perhaps because they do not feature as part of their core business or they may not have the resources to do so. Other results may have been created during the course of the project, such as market analyses or business and exploitation plans, for example, which are useful to the furtherance of the project work but have a finite applicability (particularly as to timing) to any other entrepreneur wishing to launch a product into the same market.

No.	Self-descriptive title of the result	Partner(s) owning the result(s) & involved in their further use (in Bold the partner responsible for the result)
1	User Needs Analysis	HIT – TPZ – DITS – THM - TRE
2	Architectural design of the GIFTS Integrated operational Platform – GIP	TPZ - TRE – ABSp - THM - PTV - PRO
3	GIFTS Demonstrator: The integrated platform	TPZ - TRE – ABSp - THM - PTV - PRO
4	GIFTS Service Centre – GSC: Architecture, services and communication gateways	TPZ
5	GIFTS Mobile Terminal: Type 1 – GSM, GPS Type 2 – GSM, GPS, ORBCOMM Type 3 – GPRS, GPS GIFTS software application for Tour Management	TPZ
6	S_UMTS emulator: Mobile Terminal and gateway	ABSp – TPZ
7	GIFTS Service: Rail Transport	PRO
8	GIFTS Service: eDocument	PRO
9	GIFTS Service: eCommerce	TRE - THM
10	GIFTS Service: Tour Management & Cargo Matching	TRE
11	GIFTS Service: Fleet Management	PTV
12	Evaluation and Validation of the Project Results	HIT– TPZ – DITS
13	Exploitation and Business Plans	THM - HIT– TPZ – DITS

Table 2: Exploitable Results and Owners

GIFTS is typically a Research and Technological Development project and, apart some results belonging at the stage of Scientific/Technical knowledge and methodologies, the majority of the results constitute technological results at the stage of prototype, having been developed for the purposes of demonstration trials.

For these kinds of results, the exploitation strategy that best applies depends largely on the stage of development of individual results. In the context of GIFTS, there is therefore a requirement for further investment, both of time and resource, to develop the results from the current prototype stage to the next stages, i.e.: technology implementation, dissemination and market introduction.

This may lead to promising exploitation, considering the potential for each result, either as “stand-alone”, or considering them as a whole - “GIFTS product”.

There is a promising commitment shared among Consortium partners about their willingness to proceed to exploit the GIFTS product and the achieved results. But it is also clear that this should be made taking into proper account the technical and marketing risks involved.

As mentioned earlier, for the GIFTS product the exploitation does not deal directly with commercialisation, and the time span for economic exploitation can be indicated in the medium-term (within 3 years after the end of the project).

8.3 Conclusion

The European logistics and freight transport industry is facing considerable social and environmental impacts caused by the prevalent use of road transport.

Intermodal transport represents a sustainable solution if supported by Information and Communication Technology (ICT) applications, which can also benefit the management of deliveries, and the treatment, sorting, storage and picking of freight.

The GIFTS project has developed an open access Internet portal/e-marketplace providing services to the logistics and freight transport industry in the European Union. The project has implemented a web platform of services that is fully interoperable and integrated with any ICT system. It has been tested by means of a Demonstrator platform, used in three different pilot scenarios.

Subsequent market and commercial assessment have given encouraging indication about the appreciation of the adopted technical and architectural solutions as well as about operational benefits for the target users:

- Small and Medium-Sized Enterprises can improve business by better internal workflow and practices and share information with other operators.
- Application providers can find an opportunity to reach new users by integrating services into the platform.
- GIFTS users can benefit by:
 - Greatly improved real-time information along the length of the supply chain.
 - Improved security and safety procedures.
 - Real reductions in inventory thanks to shorter lead times.
 - real reductions in losses caused by fraud or lack of adequate control

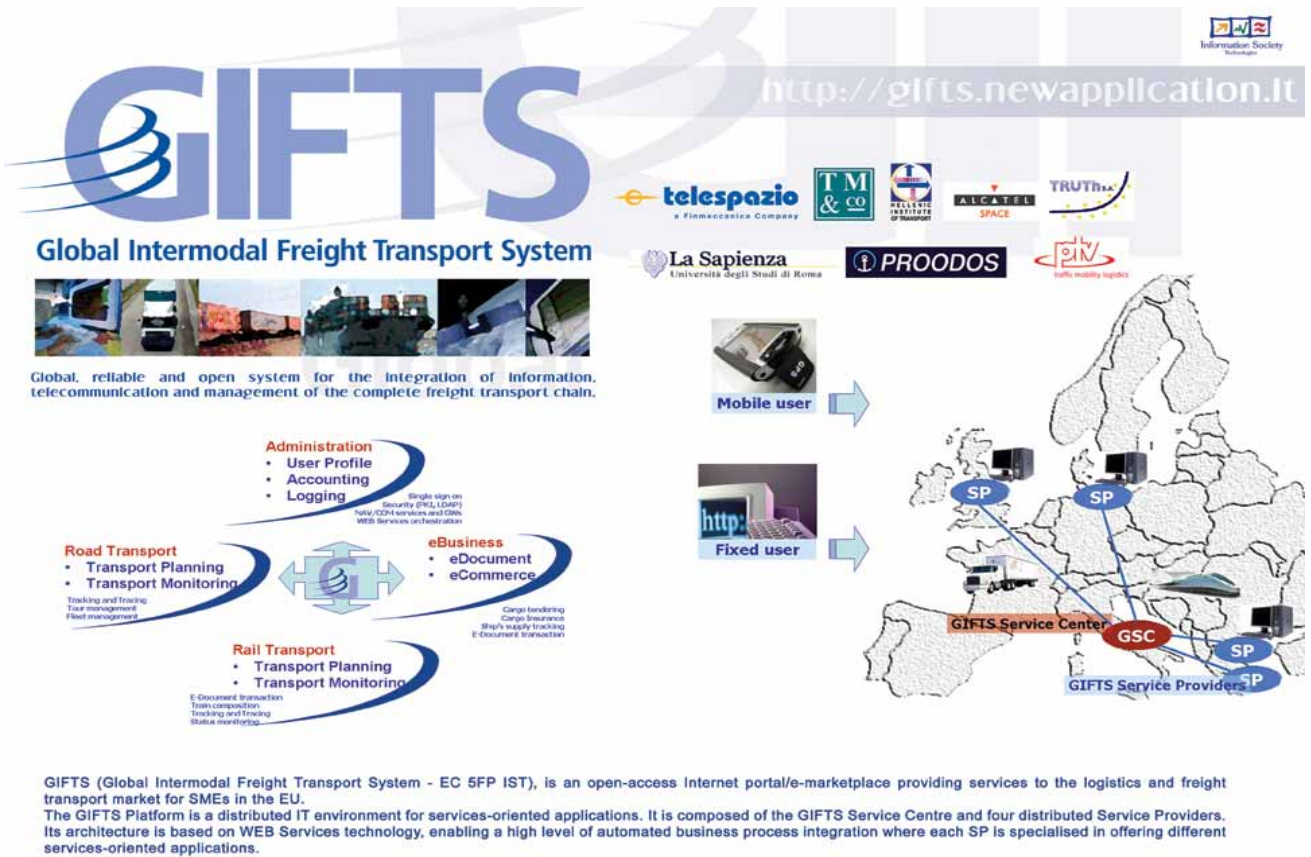



Figure 11 The GIFTS panel

9 Project Information

Project acronym:	GIFTS																												
Project full title:	Global Intermodal Freight Transport System																												
Keywords:	Freight Transportation - Navigation - Galileo - Intermodality - Satellite Systems - Info mobility - PDA - GPS - GPRS- S-UMTS.																												
Project Logo:																													
Project Planned duration:	38 Months 01-Sep-2001 - 31-Oct-2004																												
EC Programme:	5th FWP (Fifth Framework Programme) Key Action I - Systems and services for the citizen																												
Action Line:	IST-2000-1.5.1 - Intelligent transport infrastructure																												
Contract no.:	IST-2000-29364																												
Total Project Cost (Euro):	5.242.790																												
Commission funding:	2.689.043																												
Abstract	<p>GIFTS is an open-access Internet portal/e-marketplace providing services to the logistics and freight transport market for SMEs in the EU. The GIFTS Platform is a distributed IT environment for services-oriented applications. It is composed of the GIFTS Service Centre and four distributed Service Providers. Its architecture is based on WEB Services technology, enabling a high level of automated business process integration where each SP is specialised in offering different services-oriented applications.</p>																												
	<table border="1"> <thead> <tr> <th>List of participants</th> <th>Country</th> <th>Role</th> </tr> </thead> <tbody> <tr> <td>Telespazio S.p.A.</td> <td>I</td> <td>C</td> </tr> <tr> <td>Thomas Miller & Co. Ltd</td> <td>GB</td> <td>P</td> </tr> <tr> <td>Hellenic Institute of Transport</td> <td>GR</td> <td>P</td> </tr> <tr> <td>Alcatel-Bell Space</td> <td>B</td> <td>P</td> </tr> <tr> <td>TREDIT S.A.</td> <td>GR</td> <td>P</td> </tr> <tr> <td>Dipartimento di Idraulica, Trasporti, Strade</td> <td>I</td> <td>P</td> </tr> <tr> <td>PTV Planung Transport Verkehr A.G.</td> <td>D</td> <td>P</td> </tr> <tr> <td>PROODOS S.A.</td> <td>GR</td> <td>P</td> </tr> </tbody> </table> <p>C = Coordinator, P - Principal contractor, S - Sub-contractor</p>		List of participants	Country	Role	Telespazio S.p.A.	I	C	Thomas Miller & Co. Ltd	GB	P	Hellenic Institute of Transport	GR	P	Alcatel-Bell Space	B	P	TREDIT S.A.	GR	P	Dipartimento di Idraulica, Trasporti, Strade	I	P	PTV Planung Transport Verkehr A.G.	D	P	PROODOS S.A.	GR	P
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TREDIT S.A.	GR	P																											
Dipartimento di Idraulica, Trasporti, Strade	I	P																											
PTV Planung Transport Verkehr A.G.	D	P																											
PROODOS S.A.	GR	P																											
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Project Web Site URL	<p>http://gifts.newapplication.it/</p>																												