



**Environmental  
Software &  
Services GmbH**

Reference project list (status: February 2011)


Environmental Software and Services GmbH  
 Kalkgewerk 1, A-2352 Gumpoldskirchen, AUSTRIA  
 Tel: +43 2252 63305 +43 664 2451399  
<http://www.ess.co.at>    [info@ess.co.at](mailto:info@ess.co.at)

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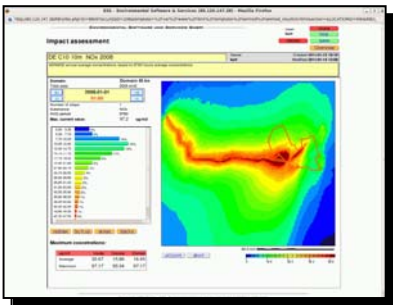
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**PM3: particulates monitoring, modeling, management**

Ref no (1)	Project title		LIFE+/CY PM3: Particulates Monitoring, Modelling, Management; CLIENT/CONTACT: Savvas Cleanthous, DLI/MLSI, Nicosia, Cyprus.					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Cyprus	1,260,000	24% EU 300,000	6	MLSI/DLI, EU/LIFE+	LIFE09 Environ., EU	2011 (ongoing)	DLI, ATLANTIS, CUT, AUTH
Detailed description of project						Type of services provided		
<p>The project's overall objective is to support the Competent Authorities in preparing cost effective and efficient particulate matter management. For this purpose, state of the art now casting, forecasting and scenario analysis software will be applied. New and innovative data collection and processing methods as well as a robust stakeholder participation process will be introduced in order to support the application of the models: <a href="http://www.ess.co.at/LIFE">http://www.ess.co.at/LIFE</a></p> <p>Based on the produced derived information, various management scenarios will be defined, and the analysis models will subsequently be defined which will incorporate the necessary technical and regulatory information but which will also incorporate socioeconomic factors into the decision making process. Model used include meteorological forecasting (MM5), soil erosion (dust entrainment) dynamic emission model, ling nested grid fate and transport modeling (CAMx), local scale modelling from urban to street canyon levels.</p>						<p>Development and implementation of DUST (PM10/2.5) modeling tools (wind erosion of natural soils, mining and construction activities, pyrogenic/industrial sources, salt spray aerosol formation and 3D transport modeling) for regional/national/local source apportionment, operational dust forecasting, and the development of a national dust management Plan for compliance with EU Directive 2008/50/EC.</p>		
								


**Porto do Acu: air quality simulation, EIA.SEA**

Ref no (2)	Project title		Air quality simulation system for the AAE for the Complexo Industrial do Açú <b>CLIENT/CONTACT:</b> Ecologus Engenharia Consultiva Ltda, Rua do Carmo, 65, 3º andar Centro, Rio de Janeiro c/o Claudia Barros - Presidente								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Brazil	240,000	25%	4	ECOLOGUS consulting Brazil	LLX, Brazil	2010-2011 (ongoing)	Braile Consulting Ltda.			
Detailed description of project						Type of services provided					
<p>SEA/EIA for a large coastal Industrial District under development, Porto do Acu, province of Rio de Janeiro, Brazil.</p> <p>The study includes the development of emission inventories and estimation for several large heavy industry plants (TPS, iron and steel, cement, automotive), transportation system and harbor with a total of more than 350 major emission sources.</p> <p>Impact assessment (annual simulations of compliance with air quality standards (NOx, SOx, PM, CO) for more than 40 annual scenario, prediction of compliance with the Brazilian air quality standards, involving meteorological re-analysis (MM5), impact assessment with AERMOD, CAMx, and INPUFF for point, area, line, volume, and mobile sources, mapping of impact zones, statistical analysis, monitoring plan, emission control optimization.</p>									<p>Design of the emission inventory, data analysis, quality assurance;                      Computation of multi-year meteorological inputs (re-analysis, dynamic downscaling)                      Computation of more than 40 annual impact scenarios with hourly, daily, and annual aggregation periods.                      Design of a monitoring plan, and optimal monitoring locations, emission control optimization to guarantee regulatory compliance.</p>		

**Selaata coastal water quality simulation**

Ref no (3)	Project title		Coastal water quality simulation: Selaata, Lebanon CLIENT/CONTACT: Elard Group, Lebanon								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Lebanon	100,000	15%	3	Elard Group, Lebanon	LCC, Lebanon Chemical Company	2010-2011 (ongoing)	Elard Group			
Detailed description of project						Type of services provided					
<p>Coastal water quality simulation, to build spatial near-shore distribution of industrial pollution to complete a study towards "the assessment of impacts of industrial marine discharges" of the Lebanese Chemicals Company (LCC) phosphate fertiliser plant in Selaata, Lebanon.</p> <p>Simulation Model used: ROMS 3D high-resolution model, scenario for a coastal domain (several nested domains around a basic 5 by 5 km, from 100 to 10 m resolution horizontal, adaptive terrain-following ten layer vertical resolution, for a continuous sludge (phosphogypsum including radioactivity (Radium 226) and soluble tracer) and heavy metals (Cadmium, Vanadium) release from Selaata LCC fertilizer plant, Lebanon.</p>									<ul style="list-style-type: none"> <li>• configuration of coastal water quality simulation model ROMS</li> <li>• definition of local bathymetry</li> <li>• generation of meteorological driving forcings (MM5/NCEP reanalysis runs)</li> <li>• release scenario analysis</li> <li>• sensitivity analysis (initial and boundary conditions, sediment characteristics)</li> </ul>		

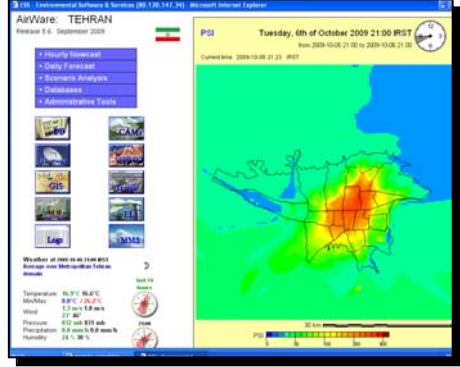
**COR: Computer Operated River Basin, Proof of Concept**

Ref no (4)	Project title		WaterWare realtime DSS/SCADA, Murrumbidgee, NSA Australia								
Name of legal entity	Country	Overall value (USD)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	NSW, Australia	AUS\$ 150,000 (Phase I, POC)	67%	4	State Water Corporation, NSW	State Water Corporation, NSW	2010	RUBICON Australia, Ltd.			
Detailed description of project						Type of services provided					
<p>COR/POC implements a real-time multi-criteria operational control version of WaterWare, based on a cascade of dynamic water demand and water budget models, starting with prognostic meteorological modeling and forecasting.</p> <p>The fully web-based model system estimates water demand (daily and seasonal), predicts tributary inflows, and drives reservoir release and in-stream (weir) storage (SCADA interface) to optimize precision irrigation water delivery, meet economic and environmental objectives, and minimize operational losses. On-line details and demo: <a href="http://www.ess.co.at/WATERWARE/NSW">http://www.ess.co.at/WATERWARE/NSW</a></p>									<ul style="list-style-type: none"> <li>• Software system configuration for the real-time operational control system;</li> <li>• Integration with the SW/NSW information system framework</li> <li>• local installation of the POC prototype</li> <li>• Data compilation and integration for the Murrumbidgee case study in collaboration with RUBICON</li> <li>• Local presentation workshop</li> </ul>		

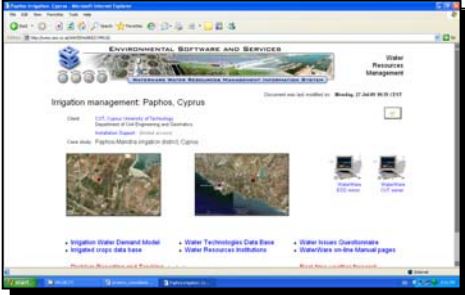
**CourseWare: Advanced Technical Training System**

Ref no (5)	Project title		CourseWare: Advanced Technical Training System					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Austria	180,000	100	5	Austrian Ministry for transport, innovation & technology	MVIT, AT:net program	2010/2011	n/a
Detailed description of project						Type of services provided		
<p>CourseWare provides flexible, adaptive and "intelligent", intuitive, attractive and fun-to-use learning environments integrating two key ICT technologies into an innovative eLearning platform:</p> <ul style="list-style-type: none"> <li>- Artificial Intelligence, maintaining a teaching dialog by a real-time hybrid forward and backward chaining expert system, to provide adaptive, context sensitive, intelligent response to the student, a personalized tutor;</li> <li>- 3G mobile touch-screen phones as revolutionary learning appliances with an open, Linux based operating system (e.g., the new Nokia N900) and the associated communication technology with SMS/MMS and mobile web access, for truly anywhere, anytime use.</li> </ul> <p>See also: <a href="http://www.ess.co.at/CourseWare">http://www.ess.co.at/CourseWare</a></p>						<p>Developments include:                      Web based lectures that include the use of on-line models and analytical tasks as 'simulated laboratory' on-line experimentation for the student;                      3G phone technology for course management and the delivery of interactive 'didactic tokens' (elements of micro learning, multiple-choice questions and related lecture elements, serious individual and cooperative games of "non-trivial pursuit") in support of the standard web-based lectures.</p>		

**AirWare: AQCC, GTA**

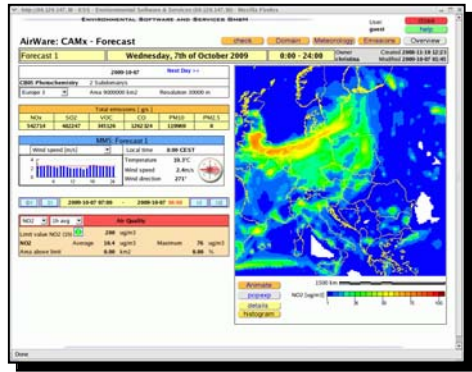
Ref no (6)	Project title		AIRWARE TEHRAN: INFORMATION SYSTEM AND DSS FOR THE AQCC, MUNICIPALITY OF THERAN, GTA (INTERNATIONAL TENDER)								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Islamic Republic of Iran	350,000 (incl. local taxes and EUREKA co-funding)	100	5	AQCC, Tehran	AQCC, Tehran	2008 2010	n/a			
Detailed description of project						Type of services provided					
<p>The project involved the implementation of the AirWare system Release R5.3 for AQCC (Air Quality Control Company, Municipality of Tehran) design and implementation of a customized solution, information system and DSS, software installation and remote support/maintenance, and user training:  <a href="http://www.ess.co.at/WEBAIR/TEHRAN">http://www.ess.co.at/WEBAIR/TEHRAN</a></p> <p>The system installation also includes the integration of the AQCC on-line monitoring data for real-time data assimilation, and a fully geo-referenced emission data base with interactive displays, analysis, and editing tools and its direct coupling to the air quality modeling system. Models are run in interactive scenario mode, for emission source EIA, and automatically, as schedules hourly now-casts and daily forecasts based on several nested/linked models, MM5, CAMx, AERMOD, PBM.</p>									<p>Information system design and implementation; data integration and coupling (multi-media emission inventory and emission estimation/dynamic simulation modeling), model development and integration, configuration of the EIA component, local installation support, remote support (operational mirror and computational services such as meteorological forecasts), user training on site.</p>		

**WaterWare: irrigation management on Cyprus**


Ref no (7)	Project title		WaterWare base system for: Paphos-Mandria irrigation district, Cyprus								
Name of legal entity	Country	Overall value (USD)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end )	consortium members			
ESS GmbH	Republic of Cyprus	128,000.- (provided as discounted academic license)	100	3	CUT, Cyprus University of Technology	CUT university research funds, ATnet eConsulting co-funding	2008 2009	n/a			
Detailed description of project						Type of services provided					
<p>Implementation and remote support of a WaterWare base system and operational mirror for CUT for teaching and research applications, Paphos-Mandria irrigation district, Cyprus, integration of RS (satellite) data for EVPTR and water demand estimates, water scheduling, strategic planning.</p> <p>The project includes the integration of remote sensing data (satellite imagery) for the estimation of evapotranspiration for the calibration and validation of the irrigation water demand module in WaterWare. In parallel to the planning level (annual) multi-criteria optimization, the project also aims at the test implementation of real-time operational control use (with embedded optimization) of the system for irrigation water allocation and scheduling.</p> <p>On-line details and demo: <a href="http://www.ess.co.at/WATERWARE/CYPRUS">http://www.ess.co.at/WATERWARE/CYPRUS</a></p>									<ul style="list-style-type: none"> <li>• Software installation (Linux/Ubuntu server) and remote support;</li> <li>• Application and scenario building, manual updates and tutorials</li> <li>• Local training workshop</li> <li>• Continuing web-based user support, operational mirror installation</li> </ul>		

**WEBAIR: City of Sisak, Croatia**

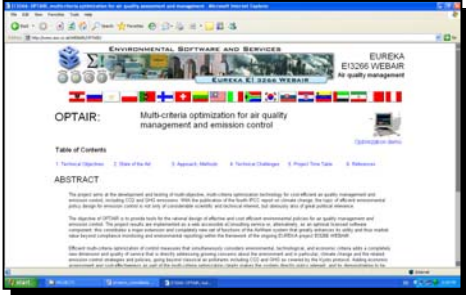
Ref no (8)	Project title		AirWare installation for EUREKA E!3266 WEBAIR in Croatia					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Croatia	300,000	20 (60,000)	4	OIKON, Zagreb	CR Ministry of Science	2008 2009	n/a
Detailed description of project						Type of services provided		
<p>The project involved the implementation of the AirWare system Release R5.3 for the industrial City of Sisak in Croatia as an operational development environment for the Croatian contribution to the EUREKA E!3266 project WEBAIR, in support of the Croatian partner, OIKON.</p> <p>Work includes the design and implementation of a customized solution, information system and DSS, software installation and continuous operation with dynamic linkage to the monitoring data from Sisak: <a href="http://www.ess.co.at/WEBAIR/SISAK">http://www.ess.co.at/WEBAIR/SISAK</a></p> <p>The system installation also includes the integration of the European level EMEP emission data and dynamic emission modeling to provide dynamic boundary conditions and estimates for long-range transport. Linkage to real-time monitoring prepares for real-time data assimilation, and a fully geo-referenced emission data base (including an implementation of the European EMEP emission data base) with interactive displays, analysis, and editing tools and its direct coupling to the air quality modeling system. Models are run in interactive scenario mode and for emission control optimization, and automatically, as schedules hourly now-casts and daily forecasts based on several nested/linked models, MM5 and WRF, CAMx, AERMOD/AERMET for street level and regulatory assessment.</p>						<p>Information system design and implementation; data integration and coupling (multi-media emission inventory and emission estimation/dynamic simulation modeling), model development and integration, configuration of the EIA component, local installation support, remote support (operational mirror and computational services such as meteorological forecasts), user training on site.</p>		




**eConsulting: web-based environmental consulting**

Ref no (9)	Project title		eConsulting: web-based environmental consulting								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Austria	200,000	100	5	Austrian Ministry for transport, innovation and technology	MVIT	2008/2009	n/a			
Detailed description of project						Type of services provided					
<p>eConsulting is building and operating a set of reference installations for fully web-based environmental information and decision support systems for the on-line support of EU environmental Directives such as 2000/60/EC, 96/62/EEC, etc. or similar environmental legislation in third countries.</p> <p>eConsulting provides real-time environmental information and computational tools for environmental management as a web-based outsourcing solution to the competent authorities or regulated industries, and a (mandated) public information systems component operated on behalf of these institutions. On-line interactive analysis on demand (e.g., EIA studies) and immediate answers replace the traditional consultants' static reports. Direct access by any number of distributed users and stakeholders, and an optional public information system components add to the advantages of a web-based implementation.</p> <p>See also: <a href="http://www.ess.co.at/eConsulting">http://www.ess.co.at/eConsulting</a></p>									<p>The project develops and tests high-performance computational resources, advanced state-of-the-art software tools supported and maintained by domain experts and on-line application and general user support offer a range of services such as impact assessment (EIA) at a level of scientific and technical quality that is usually beyond the reach of any individual subscriber.</p> <p><i>Software as a Service</i> through the Internet is the medium to provide a next generation of on-line scientific-technical consulting and related computational services.</p>		

**OPTAIR: multi-criteria optimization for emission control**

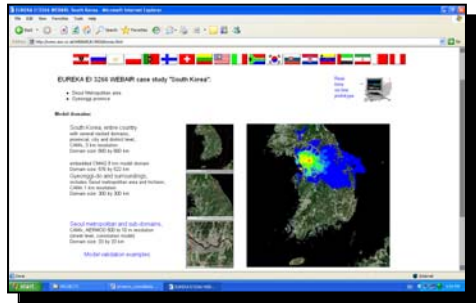
Ref no (10)	Project title		OPTAIR: Multi-criteria optimization for air quality management and emission control						
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members	
ESS GmbH	Austria	700,000	100	6	FFG (Austrian Industrial Research Foundation)	FFG, and Province of Lower Austria	2007/2010	n/a	
Detailed description of project						Type of services provided			
<p>OPTAIR develops tools for the multi-criteria optimization of atmospheric emission control measures., including CO<sub>2</sub>e and GHG. The project aims at the development and testing of multi-objective, multi-criteria optimization technology for cost-efficient air quality management and emission control, including CO<sub>2</sub> and GHG emissions. With the publication of the fourth IPCC report on climate change, the topic of efficient environmental policy design for emission control is not only of considerable scientific and technical interest, but obviously also of great political relevance.</p> <p>The objective of OPTAIR is to provide tools for the rational design of effective and cost efficient environmental policies for air quality management and emission control. The project results are implemented as a web accessible eConsulting service or, alternatively, as an optional licensed software component: this constitutes a major extension and completely new set of functions of the AirWare system that greatly enhances its utility and thus market value beyond compliance monitoring and environmental reporting) within the framework of the ongoing EUREKA project E!3266 WEBAIR.</p> <p>See also: <a href="http://www.ess.co.at/WEBAIR/OPTAIR">http://www.ess.co.at/WEBAIR/OPTAIR</a></p>							<p>Development of software tools within the framework of EUREKA E! 3266, implementation and testing of optimization software based on the fully 3D photochemical model CAMx, with test cases in Korea, Tehran, Cyprus, and Sisak, Croatia</p> <p>Tool in support of EU air quality framework Directive, and to support cost efficient emission reduction strategies based on a complex emission inventory and related technology data bases (e.g., in support of the IPPC Directive 2008/1/EC) and as part of EIA studies.</p>		

**Nile Basin Water Resources Information and Decision Support System**


Ref no (11)	Project title		Nile Basin Water Resources Information and Decision Support System Needs Assessment, Conceptual and Detailed Design, Development and Implementation Plan, draft TOR for the NB-DSS					
Name of legal entity	Country	Overall value (USD)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Nile Basin (Egypt, Sudan, Ethiopia, Kenia, Tanzania, Burundi, Rwanda, Uganda, DR Congo)	600,000	25  (USD 150,000)	3	NBI (PMU, Addis Ababa)	World Bank, UNOPS	2007/2008	Hydrophil GmbH (Austria), CEDARE (Egypt), ITAD (UK), KIM Consulting (Tanzania), Eyob Consultant (Ethiopia)
Detailed description of project						Type of services provided		
<p>Design of an information and decision support system (DSS) for the Nile Basin water resources management and development (NBI with nine member countries, World Bank funded international project).</p> <p>Situation and needs assessment (participatory approach), including a series of stakeholder workshops, DSS training and awareness workshops, system design (DSS, river basin modeling, and information systems), implementation plan, TOR and inputs to the tender documents.</p>						 <p>DSS Training courses (11 courses in nine countries), material development and course implementation including distance learning system/DSS tools; Conceptual design of the DSS and Information management system Development and implementation plan Technical requirements (TOR)</p>		

**WEBAIR KOREA: air quality information system and DSS**


Ref no (12)	Project title		WEBAIR KOREA: air quality information system and DSS, assessment and management for the Republic of South Korea					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	South Korea	250,000	60 (150,000)	4	BioTel Ltd	Koril RDF Foundation, South Korea	2005 2009	BioTel Ltd., Anyan University, South Korea
Detailed description of project						Type of services provided		
<p>WEBAIR KOREA is an implementation of the WEBAIR system for South Korea, national scope with emphasis on the MegaCity of Seoul and Gyeonggi province.</p> <p>The system includes an implementation of the national scale CAPSS emission inventory (Clean Air Policy Support System) and real-time emission modeling, meteorological forecasting based on MM5, and several air quality simulation models (CAMx, AERMOD, PBM) run a ASP service on a dedicated web server for daily forecasts and hourly now-casts.</p> <p>The project also includes the integration of CMAQ as an alternative photochemical air quality forecast model, implemented in a distributed server client-server architecture with the dynamic re-projection of spatial model results (grids) from Lambert conical to Universal transverse Mercator (UTM) projection for the dynamic display of remotely computed model results.</p> <p>See also: <a href="http://www.ess.co.at/WEBAIR/KOREA/korea.html">http://www.ess.co.at/WEBAIR/KOREA/korea.html</a></p>						<p>Applications includes web based information system: emission inventory and modeling, air quality monitoring data management, and several nested 3D dynamic models including MM5, CAMx, AERMOD, and PBM in an integrated, web based (ASP) implementation, and DSS, producing regular (daily and hourly) web based report of emissions and ambient air quality for Korea.</p>		




**AirWare: Cyprus, DLI/MLSI**

Ref no (13)	Project title		DLI/MLSI AirWare Cyprus - Competition Nr. CY0004.643.01.02								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Republic of Cyprus	166,000	75% <b>(124,500)</b>	5	DLI/MLSI	DLI/MLSI	2005  2008	ATLANTIS Cyprus			
Detailed description of project						Type of services provided					
<p>The project involved the implementation of the AirWare system for DLI/MLSI for the Republic of Cyprus, software installation and remote support/maintenance, and user training:</p> <p><a href="http://www.ess.co.at/AIRWARE/CYPRUS">http://www.ess.co.at/AIRWARE/CYPRUS</a></p> <p>The system installation also included the integration of the UNOPS emission inventory (University of Stuttgart) as a fully geo-referenced data base with interactive display, analysis, and editing tools and its direct coupling to the air quality modeling system. Models are run in interactive scenario mode and automatically, as schedules hourly now-casts and daily forecasts based on several nested/linked models, CAMx, AERMOD, PBM.</p> <p>The model system was installed on a local server on Cyprus, with a complete mirror installation at ESS. Meteorological forecasts and photochemical modeling was performed at ESS, the results dynamically linked from the server and web pages on Cyprus.</p>									<p>System design and implementation; data integration and coupling (emission inventory and simulation modeling), model development and integration, installation as a turn-key system, remote support, user training.</p> <p>Operation of a mirror installation at ESS, remote system maintenance and user support.</p>		

**WEBAIR: EUREKA E!3266 Air quality assessment**

Ref no (14)	Project title		WEBAIR E!3266 - Web-based Information System and DSS for urban and industrial air quality assessment and management								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	International	5,000,000	28 (1,400,000)	6	EUREKA Euroenviron	EUREKA / FFG (580,000)	2004  2010	Partners from 22 countries			
Detailed description of project						Type of services provided					
<p>WEBAIR builds a web based application service for real-time multi-media management information system for industrial, urban and regional air quality assessment and management, integrating on-line monitoring and modeling with AI components, in support of relevant EU Directives (2000/60/EC) . WEBAIR includes the development of on-line emission inventories, dynamic emission modeling, real-time meteorological forecasting, and several integrated 3D dynamic nested grid now-casting and forecasting air quality models.</p> <p>The consortium of E!3266 includes 22 countries: ESS (Austria), IMM-RAS (Russia), ATLANTIS (Cyprus), GEMAC (Portugal), FMI (Finland), UAV (Portugal) ORDECSYS (Switzerland), IP, UAB-ELTERA (Lithuania), ISTAC, EA-TEK (Turkey), Ecoserv (Malta), GUT (Poland), UH2M (Morocco), BioTel (South Korea), Airshed (South Africa), Syreco (Italy), CESIMO (Venezuela), ECM (Slovak Republic), NIB-MBS (Slovenia), OIKON (Croatia), ELARD (UAE), AQCC (Iran), QSYSTECH (Bahrain), CAI (Peru).</p> <p>Project data and financial details available on-line at <a href="http://www.eureka.be/inaction/AcSearchProject.do">http://www.eureka.be/inaction/AcSearchProject.do</a> under project ID: 3266</p>									<p>Information system and DSS for air quality management, design and implementation: extends the scope of AIDAIR E!1388 into on-line, real-time monitoring, modeling, and forecasting, as well as to accidental emissions from industrial plants. Object-oriented client/server technology supports distributed and mobile clients through the Internet or dedicated VPN connections, and integrates: real-time monitoring and data analysis; dynamic simulation and optimization models; emission inventories and estimation tools; linkages to energy, traffic and industrial process models; multi-criteria decision support tools.</p>		

**OPTIMA: Optimization for Sustainable Water Resources Management**


Ref no (15)	Project title		OPTIMA – INCO-CT-2004-509091: Optimization/DSS for Sustainable Water Resources Management								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Mediterranean Region, North Africa	1,976,900	20  (EUR 401,900)	6	EU/DG Research	EC FW 6, INCO-MPC	2004/2007	12 partners from Mediterranean countries			
Detailed description of project						Type of services provided					
<p>The overall aim of OPTIMA was to develop, implement, test, critically evaluate, and exploit an innovative, scientifically rigorous yet practical participatory DSS approach to <b>water resources management and economic assessment at the river basin scale</b> intended to increase efficiencies and to reconcile conflicting demands by optimizing water allocation and investment decisions. Based on the European Water Framework Directive (2000/60/EC) the approach equally considered economic efficiency, environmental compatibility, and social equity as the pillars of sustainable development; the system was being implemented and tested in seven river basin around the Mediterranean, including: Turkey, Cyprus, Lebanon, Jordan, Palestine/Israel, Tunisia, Morocco. Methodology included several data bases, simulation and optimization models and tools for direct stakeholder involvement such as on-line data bases and questionnaires; for more details visit <a href="http://www.ess.co.at/OPTIMA/">http://www.ess.co.at/OPTIMA/</a></p>									<p>Project coordination and management, information system <b>design, development, implementation</b> and support of a web-based river basin <b>management information system for multi-criteria optimization/DSS</b>, including an object oriented river basin data base compliant with WFD (2000/60/EC) (applied in parallel in seven basin) and auxiliary analytical tools including several simulation models, data bases and GIS, participatory DSS with direct stakeholder involvement, development of tools for stakeholder management (data bases, on-line questionnaires, analysis).</p>		

**WaterWare: Yangtze River (YRSRI), PRC**


Ref no (16)	Project title		River Basin Management Information and DSS for the Yangtze, China, Phase I – Contract No 2004WEME13309AT					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	P.R. China	110,000	100	6	Changjiang Water Resources Commission, YRSRI	National Chinese	2004/2007	n/a
Detailed description of project						Type of services provided		
<p>The project developed an integrated, model-based information and decision support system for water resources management (WaterWare) . The System was designed to support the implementation of national legislation for basin and land management. The river basin management information system was being applied to compile and organize all relevant hydrological, geo-physiographical, and socio-economic data for water resources planning (river basin master plan), water allocation, water quality management, and flood protection for the Yangtze and 18 major tributaries. Includes numerous GIS themes such as DEM, soils, land cover for the spatially explicit simulation models as well as satellite derived maps (LANDSAT 7) as common geo referencing background. It included a dynamic rainfall-runoff model that processed land use scenarios into a basins runoff and erosion characteristics. A major element of development was the technical and administrative adaptation of the system to a very large river basin (1,800,000 km<sup>2</sup>) and complex, distributed administrative structure with several provinces involved and adaptation of the data bases (including an object-oriented GIS data base with map catalog, interactive map design, overlay composition, and map web server; for more details visit <a href="http://www.ess.co.at/WATERWARE/CHINA/yangtze.html">http://www.ess.co.at/WATERWARE/CHINA/yangtze.html</a></p>						<p>Development, implementation and support, including extensive user training, and continuing remote maintenance and user support of a web-based river basin management information system, delivered and supported as a turn-key system for local server and mobile (high-end portable computer) implementation.</p>		



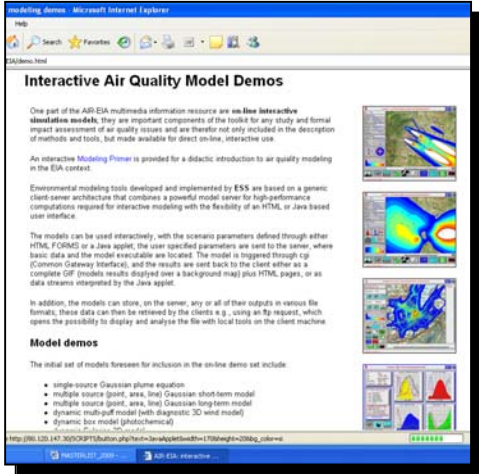
**SMART: Sustainable Management of Scarce Water Resources in the coastal zone**

Ref no (17)	Project title		SMART – ICA3-CT-2002-10006: Sustainable Management of Scarce Water Resources in the coastal zone (Information System and DSS for ICZM)						
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members	
ESS GmbH	Mediterranean Region, North Africa	1,574,630	25 (EUR 388,025)	6	EU/DG Research	EC FW 6, INCO-MED	2002/2005	8 partners from Mediterranean countries	
<b>Detailed description of project</b>						<b>Type of services provided</b>			
<p>SMART was based on a multi-sectoral integration of quantitative and qualitative analysis, combining advanced tools of quantitative systems engineering, using numerical simulation models (<b>water resources and land use change</b>), with methods of environmental, socio-economic and <b>policy impact assessment</b> using rule-based expert systems technology and <b>interactive decision support (DSS)</b> methods. The approach equally considered economic efficiency, environmental compatibility, and social equity in a range of development scenarios summarized by a system of policy relevant indicators. The model system was implemented and tested in seven river basins around the Mediterranean, including: Turkey, Lebanon, Jordan, Egypt (the Alexandria branch of the Nile) and Tunisia. The methodology included several data bases, cascading simulation models, and tools for multi-criteria indicator analysis and satellite data base LULC analysis and modeling;</p> <p>for more details visit <a href="http://www.ess.co.at/SMART/">http://www.ess.co.at/SMART/</a></p>							<p>Project coordination, development, implementation and support of a web-based river basin management information system (applied in parallel in five basins, in Turkey, Lebanon, Jordan, Egypt, and Tunisia) and auxiliary analytical tools including a dynamic land use change model, including design and implementation of several relational water resources/regional development data bases and GIS.</p>		

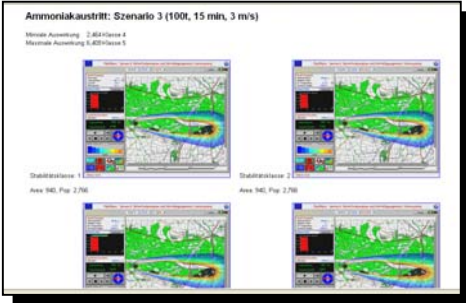
**CENVIS Phase I: National Data Base and GIS for hazardous installations**

Ref no (18)	Project title		CENVIS Phase I: National Data Base and GIS for hazardous installations (Information system and DSS for technological risk analysis and management, implementation support for the Seveso II Directive)								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Netherlands	105,000	100	6	RIVM, Netherlands	RIVM	2002/2004	n/a			
Detailed description of project						Type of services provided					
<p>CENVIS has designed and implemented a national scale data base and associated GIS system for hazardous installation (Seveso II and national classification) in the Netherlands, including a (relationally linked) hazardous substances data base Multi-attribute data for several thousand installation were organized in an object-oriented data base, retrieval, graphical display, and analysis system based on the ORACLE DBMS.</p> <p>Integration of several large (national scale) data bases and analytical models and GIS, directly linked to the object/installation data for risk assessment and emergency/scenario simulation in compliance with EU Directive 96/82/EC 9Seveso II).</p> <p>For selected interface examples, visit: <a href="http://www.ess.co.at/RISK/CENVIS/examples.html">http://www.ess.co.at/RISK/CENVIS/examples.html</a></p>									<p>System design including data base design/ERM, software development, data import and quality assurance from third party data bases, implementation, model software integration, GUI development, installation and delivery of a turn-key system (Linux based rack mounted servers, HP Proliant series, ORACLE data base management software) , remote support of the installation during the evaluation phase.</p>		


**ENV-e-City: Environmentally Viable Electronic City**

Ref no (19)	Project title		ENV-e-City/27580 – EDC-11035: Environmentally Viable Electronic City (DSS and information systems for urban environmental management)					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Austria, Greece, Germany, Netherlands, Norway	2,800,000	10  (EUR 280,000)	4	EC, DG research	eContent program	2002/2003	ESS (AT), AUTH (HE), FHG/FIT, FAW ULM, USTUTT LOH (DE), RIVM, TNO (NL) NILU, NORGIT (N), FMI (FI)
<b>Detailed description of project</b>						<b>Type of services provided</b>		
<p>The Environmentally Viable Electronic City project aimed at exploiting public environmental data through the Internet; ESS is developing ASP examples for support of the Air Quality Framework Directive 96/62/EC. The central component was a web server based implementation of data bases and models for air quality assessment and management, demonstrating web-based implementation for remote access and interactive, on-line use.</p> <p>ASP tools included on-line emission inventories and dynamic emission modeling, primarily using a case study of the Helsinki metropolitan area combining on-line emission inventory with regular forecasting air quality model runs.</p>						 <p>The screenshot shows a web browser window titled 'Interactive Air Quality Model Demos'. The page contains text describing the project and lists several model demos: single source Gaussian plume equation, multiple source (point, area, line) Gaussian short-term model, multiple source (point, area, line) Gaussian long-term model, dynamic multi-puff model (with diagnostic 3D wind model), and dynamic box model (photochemical). There are also several small images showing air quality maps and graphs.</p>		
							<p>Implementation of on-line web based services (ASP) including emission inventory and interactive air quality models for the Helsinki region, with scenario analysis and regular (hourly) now-casts and daily forecasts basin on regional weather forecasts and a diagnostic meteorological model.</p>	


**RiskWare: Donauchemie AG, Austria**

Ref no (20)	Project title		Industrial Training Austria					
Name of legal entity	Country	Overall value (ECU)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Austria	46,750	100	3	Donau Chemie AG, Werk Pischelsdorf	DC-AG	2002-2003	n/a
Detailed description of project						Type of services provided		
<p>RiskWare for Donauchemie AG was run parallel to the EU sponsored A-TEAM project, and implemented a range of accident simulation models for the Donauchemie AG plant.</p> <p>They were concentrating on a range of accident scenarios under the Seveso II Directive that included downstream, cascading domino-effects around as et of large Ammonia storage tanks and the associated railway unloading facilities. The simulations explored the potential area affected (and subject to potential evacuation) for a broad range of probabilistic accident conditions and meteorological scenarios.</p> <p>For scenario details, visit: <a href="http://80.120.147.32/DCAG/main.php">http://80.120.147.32/DCAG/main.php</a></p>						<p>Installation of RiskWare for a range of Seveso II accident scenarios, data compilation, configuration, scenario and sensitivity analysis for release and weather scenarios, implementation of a dynamic (MULTI-PUFF) simulation model as a web-based solution.</p>		


**ATMOS: Atmospheric Sciences Information Resource**

Ref no (21)	Project title		ATMOS – INTAS-00-189: Atmospheric Sciences Information Resource					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Western Siberian Lowlands, Lake Baikal region	150,000	13 (EUR 19,500)	3	INTAS	INTAS	2001/2004	ESS (Austria), RAL (UK), IAO (Russia)
Detailed description of project						Type of services provided		
<p>ATMOS was designed to provide a bilingual Internet portal on Atmospheric Physics and Atmospheric Chemistry, and the related application domain of air quality assessment and management with emphasis on the West Siberian Lowlands and Lake Baikal the geographical scope; for more details view <a href="http://www.ess.co.at/ATMOS/">http://www.ess.co.at/ATMOS/</a>.</p> <p>The system included a case study of the city and region (oblast) of Tomsk, Western Siberia featuring on-line emission inventory and interactive simulation models (AirWare).</p> <p>Among the main research topics for the AirWare application in Tomsk were the extreme climatic conditions and the representation of atmospheric stability and turbulence under extremely low temperature.</p>						<p>Themes included Atmospheric Spectroscopy, Chemistry, Aerosols, Dynamics, Radiation and Solar- Terrestrial Relationships, and the applied domains of Air Quality Assessment and Management, Modelling, and Environmental Impact Assessment.</p>		

**ASTRAL: Urban development, transportation and environment information system**

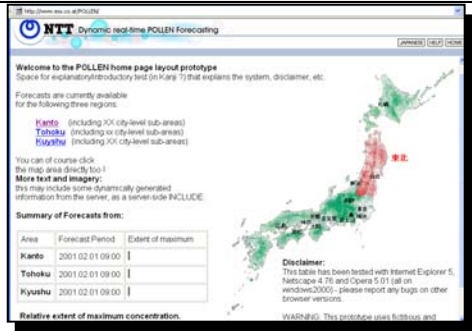
Ref no (22)	Project title		ASTRAL – EVK4-CT 2001-80001								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Austria, UK, Italy, Belgium, Finland	276,350	22 (EUR 61,800)	4	EC	EESD-1999	2001/2003	Austria, UK, Italy, Finland			
Detailed description of project						Type of services provided					
<p>ASTRAL was aiming at adding value to the results of the LUTR group of land use change and transportation research projects, including building a web-portal for a cluster of related urban development, transportation and the environment projects.</p> <p>The project built on the SUTRA (Sustainable Urban Transportation) project results and web-based tools; including city and projects data bases within the EU sponsored City of Tomorrow research cluster.</p> <p>Besides data bases of project, several on-line demos of related modeling tools were integrated with the system.</p>									<p>Work package coordination, development of an interactive website for the LUTR cluster of projects.</p>		

**AIR-EIA: air pollution multi-media information source**


Ref no (23)	Project title		AIR-EIA: air pollution and environmental impact assessment: the mutli-media information source					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Austria, Greece, Germany	550,000	16 (EUR 90,200)	3	EC	Info 2000	2000/2001	n/a
Detailed description of project						Type of services provided		
<p>AIR-EIA was designed to provide improved access to state-of-the-art multi media information resources on Air Pollution aspects of Environmental Impact Assessment. The objective was to exploit, and integrate, multi media contents and services;</p> <p>for more detail, visit: <a href="http://www.ess.co.at/AIR-EIA/">http://www.ess.co.at/AIR-EIA/</a></p>								
<p>As a one-stop information resource, AIR-EIA compiled:</p> <ul style="list-style-type: none"> <li>• procedures for permits and licenses related to EIA studies on air pollution</li> <li>• EU and national legislation on EIA and related air quality regulations</li> <li>• case studies and background material</li> <li>• technical data and methodological information.</li> </ul>								

**POLLEN: air quality and particulates (pollen) forecasting system for Japan**

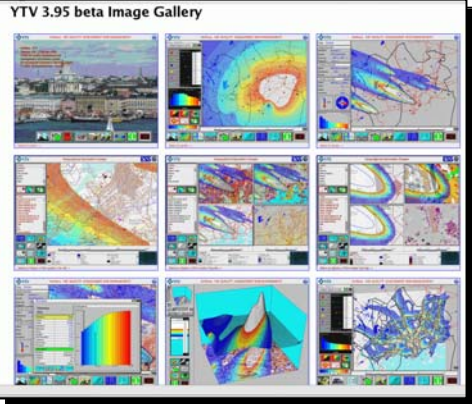
Ref no (24)	Project title		POLLEN: air quality and particulates (pollen) forecasting system for Japan (Web-based information and DSS for pollen warning via WAP/mobile phones)					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Japan	875,000	100	6	NTT GP, Nippon Telegraph and Telephone	NTT	2000/2005	n/a
Detailed description of project						Type of services provided		
<p>POLLEN combined a sub-project for the city of Morioka, Northern Japan with traditional air pollutants, emission inventory, population data base for exposure, and a range of air quality models with an on-line, real-time modeling and daily 48 hour forecasting system for biogenic particulates (cedar pollen) for three main region in Japan: Kiushu, Kanto, and Tohoku.</p> <p>The pollen forecast system is operational on <a href="http://www.kafun-info.jp">http://www.kafun-info.jp</a></p> <p>The system includes a unique model solution for particle emissions (dynamic emission model based on long-term hydro-meteorological conditions, wind entrainment, transport and deposition, as well as wind driven re-suspension of fine particles (PM2.5); numerous monitoring stations were used for real-time data assimilation.</p>						<p>Design, development, data integration, operations (ASP) and remote support including dynamic mirror of the POLLEN system local implementation, including real-time weather data processing (3D diagnostic model based on weather service data for more than 30 meteo stations) emission modeling, wind driven entrainment and re-suspension of pollen, transport (3D, generation of dynamic concentration/exposure maps for web and mobile phone (WAP) formats, public information system.</p>		




**WaterWare: River basin management, Kelantan, Malaysia**

Ref no (25)	Project title		NAHRIM - River Basin Management DSS for the Kelantan river, Malaysia, Phase I								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Malaysia	140,250	100	5	National Hydraulic Research Institute of Malaysia, KADA irrigation district	Ministry of Agriculture, National Malaysian	2000/2004	LANDASAN Teknologi Sdn, Bhd., Kelana Jaya, Selangor, Malaysia			
<b>Detailed description of project</b>						<b>Type of services provided</b>					
<p>Implementation of a <b>river basin management information system</b> for the Kelantan river in Malaysia, including the development of a specific module for irrigation water demand estimation. The system has been applied to compile and organize all relevant hydrological and socio-economic data for water resources planning (river basin master plan), water allocation and irrigation management in the Kelantan river basin in North-Eastern Malaysia, supporting an important rice growing area of national importance (KADA irrigation association). Major elements were a distributed architecture and the support of remote users in the irrigation districts. The project was based on WaterWare, an integrated, model-based information and decision support system for water resources management, developed and supported by ESS GmbH.</p> <p>For more details view <a href="http://www.ess.co.at/WATERWARE/malaysia.html">http://www.ess.co.at/WATERWARE/malaysia.html</a></p>									<p>Development, implementation and support, including on-site installation support and repeated user training courses, and continuing remote maintenance of a river basin management information system , data acquisition, data base design and implementation, data processing, application building, scenario building and simulation, system customization, delivered and supported as a turn-key system with hardware and technical support provided by the local project partner.</p>		

**AirWare: Helsinki, (YTV), Finland**

Ref no (26)	Project title		AirWare Helsinki/YTV					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Finland	113,385	100	4	YTV, City of Helsinki	YTV	2000/2004	n/a
Detailed description of project						Type of services provided		
<p>The project included the configuration, installation, and support of a turn-key AirWare system (workstation version) for the Helsinki metropolitan region. This included a combination of data bases (emission inventory for point, area, and line sources linked to EMME/5, GIS, monitoring data, population) with a range of dynamic, interactive simulation models, implemented on a Linux server.</p> <p>A special feature was the integration of the air quality models with the EMME/5 transportation simulation (dynamic equilibrium) model that provides traffic emission on a road segment basis for individual hours during a 24 hour daily cycle.</p> <p>AirWare YTV combined both regular, automatic daily model runs with the interactive use of the demos for scenario analysis.</p>						<p>System development and configuration, data base design and data import for emission inventory, GIS, monitoring data; model implementation and linkage to the emission data base. Turn-key system installation under Linux, user training and remote support. Operation of a mirror installation.</p>		
								

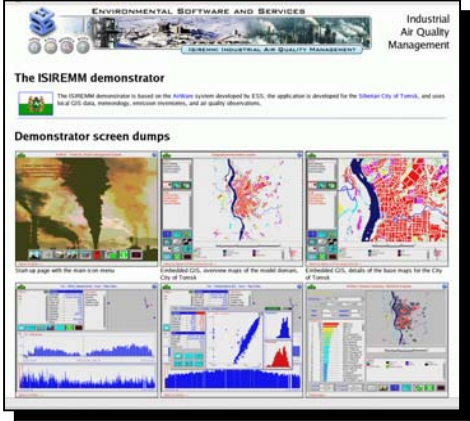
**SUTRA: Sustainable Urban Transportation**

Ref no (27)	Project title		SUTRA – EVK4-CT-1999-00013: Sustainable Urban Transportation								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Argentina, Poland, Italy, Switzerland, Israel, Portugal, Greece	2,455,400	24 (EUR 589,000)	6	EESD, City of Tomorrow	EESD, City of Tomorrow	2000/2003	10 partners from 8 countries			
<b>Detailed description of project</b>						<b>Type of services provided</b>					
<p>Sustainable Urban Transportation, addresses the problem of urban land use, the transportation system, and the environment. With a system of coupled simulation models, scenarios of urban development are explored and compared for Buenos Aires, Gdansk, Geneva, Genoa, Lisbon, and Tel Aviv.</p> <p>On-line project reports and results: <a href="http://www.ess.co.at/SUTRA">http://www.ess.co.at/SUTRA</a></p> <p>Project partners included: PTV (Germany), FEEM (Italy), ARPAL (Italy), MEI (Israel), AUTH (Greece), UAV (Portugal), UG (Switzerland), GUT (Poland), UB (Argentina), CDG (Italy)</p>									<p>Design and implementation of on-line web based emission inventories and dynamic air quality models for all case study cities, coupling of transportation models (VISUM, EMME/5) traffic emission model (TREM) and urban air quality models into an integrated environmental information system and DSS.</p>		

**A-TEAM: Advanced Training System for Emergency Management**

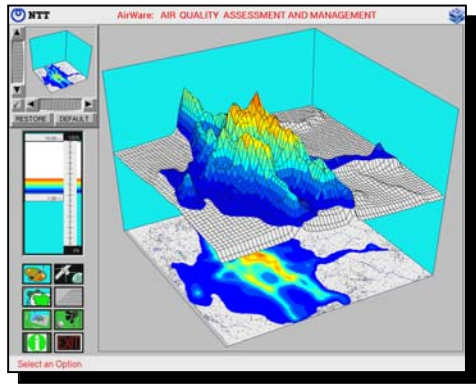
Ref no (28)	Project title		A-TEAM – IST-1999-10176: Advanced Training System for Emergency Management						
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members	
ESS GmbH	Austria, Portugal, Italy, UK, Greece, Switzerland	3,238,900	21 (EUR 682,700)	6	EC	IST 1999	2000/2003	CHIRON (Portugal), DNV (UK), CSALT (UK), UPC (Spain), SYRECO (Italy), AUTH (Greece), ASIT (Switzerland)	
<b>Detailed description of project</b>						<b>Type of services provided</b>			
<p>A-TEAM developed a web-based training system for emergency management, with emphasis on the chemical industry, aimed at fire fighters both within the industry and public civil defense forces. A real-time expert system, emergency simulation models, and a case-based reasoning system provided the technical elements of the system;</p> <p>Real-time forward chaining expert systems technology together with case-based reasoning and complex modeling including 3D dynamic CFD models for cases such as tunnel fires are used to provide a sufficiently detailed representation of the evolution of an emergency to provide realistic, reliable and useful decision support to emergency response teams.</p> <p>For more details visit: <a href="http://www.ess.co.at/A-TEAM/">http://www.ess.co.at/A-TEAM/</a></p>							<p>The project developed and tested a new approach to advanced technical training using an integration of artificial intelligence (AI) technologies and dynamic simulation modeling to create fully interactive multi-media content within a real-time knowledge-based system framework for the domain of emergency management applications. The underlying client-server architecture supported easy access in Intranet/Internet distributed systems. Nine partner institutions from six countries cooperated in A-TEAM, providing a rich combination of academic excellence, software engineering, and practical safety management experience.</p>		

**ISIREMM: Regional Environmental Monitoring & Management**


Ref no (29)	Project title		ISIREMM – ICA2-CT 2000-10024: Integrated System for Intelligent Regional Environmental Monitoring & Management								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Russia	628,500	16 (€102,189)	3	EC INCo Copernicus	EC INCo Copernicus	2000/2003	8 partners from 6 countries			
Detailed description of project						Type of services provided					
<p>ISIREMM designed an Integrated System for Intelligent Regional Environmental Monitoring and Management, integrates simulation modeling with a wide range of monitoring technologies including LIDAR, SODAR, and photometric methods in order to fully exploit all available information resources for environmental management and make the best possible use of the available data; <a href="http://www.ess.co.at/ISIREMM/">http://www.ess.co.at/ISIREMM/</a>.</p> <p>Partners include: IAO (Russia), IMM-RAS (Russia), NROG (Russia), SRI (Kasachstan), IP (Belarus), SILOGIC (France), AUTH (Greece).</p>						 <p>The screenshot shows the 'ISIREMM demonstrator' interface. It features a header with the logo 'ENVIRONMENTAL SOFTWARE AND SERVICES' and 'Industrial Air Quality Management'. Below the header, there is a section titled 'The ISIREMM demonstrator' with a brief description. The main part of the interface is titled 'Demonstrator screen dumps' and displays several panels: a 3D terrain map, a 2D map with red and blue markers, a line graph showing data trends, and a bar chart. The interface is designed for monitoring and management of air quality.</p>			<p>Major developments in ISIREMM include LIDAR, photometer (all sky camera) and SODAR implementations, including their integration into a mobile unit; integration of the monitoring data and satellite imagery with a new generation of 3D aero-thermochemistry models based on local and remote (volumetric) sensor (stationary and mobile) data flows for city scale pollutant transport and transformation; and the integration of these components into an interactive decision support system with a public information system component.</p>		

**AirWare: Morioka, Japan**


Ref no (30)	Project title		POLLEN: air quality and particulates (pollen) forecasting system for Japan (Web-based information and DSS for pollen warning via WAP/mobile phones)					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Japan	120,000	100	4	NTT GP, Nippon Telegraph and Telephone	NTT	2000/2001	n/a
Detailed description of project						Type of services provided		
<p>Implementation of AirWare for the city of Morioka, Northern Japan.</p> <p>The project implemented the model system for the Morioka valley, including model calibration (southern boundary conditions) and the implementation of a local model validation tool, comparing high-resolution traffic emission dispersion modeling (mixing zone approach) with monitoring data.</p> <p>Developments included the development and implementation of a high-resolution street (line source) convolution models capable of simulating the entire city street network (several thousand segments) with very high computational efficiency.</p>						<p>Implementation of the AirWare system for Morioka, Japan. Data compilation and processing, systems implementation, customization and custom development. application building, model calibration and validation, scenario analysis, reporting.</p>		




**SIGRIC: Sistema di Gestione Rischio Chimico, Pisa, Italy**

Ref no (31)	Project title		SIGRIC: Sistema di Gestione Rischio Chimico								
Name of legal entity	Country	Overall value (ECU)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Italy	80,300	100	5	Provincia di Pisa	Provincia di Pisa	1998/2000	n/a			
<b>Detailed description of project</b>						<b>Type of services provided</b>					
<p>SIGRIC developed a RiskWare Application for the <i>Provincia di Pisa</i>, Italy; the system combined elements of AirWare (air quality assessment and management) with RiskWare for emergency management, using a rule based inference engine coupled to data base and GIS.</p> <p>RiskWare was configured to assist the emergency operator at the fire brigade to conduct an expert-system driven interview with a caller reporting an emergency to elicit enough relevant information to better select, coordinate and dispatch the emergency services.</p> <p>The knowledge base for the inference engine was built in collaboration with the University of Pisa.</p> <p>For more details visit <a href="http://www.ess.co.at/SIGRIC/">http://www.ess.co.at/SIGRIC/</a></p>									<p>Local implementation, configuration and training for a combined AirWare and RiskWare system, X11 Linux workstation implementation; Combined RTXPS, a real-time expert system for emergency management, based on an integration of real-time forward chaining and backwards chaining strategies with data bases, GIS and interactive modeling for risk assessment and emergency simulation and an AirWare base system.</p>		


**MUTATE: Multimedia Tools for Advanced GIS Training in Europe**

Ref no (32)	Project title		MUTATE – MM 1019 (ET): Multimedia Tools for Advanced GIS Training in Europe								
Name of legal entity	Country	Overall value (ECU)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Austria, Portugal, Netherlands, Italy, Switzerland	1,180,400	6 (funding EUR 67,140)	5	EC Commission Services, eContent	EC eContent programme	1998 2001	CHIRON (Portugal), UU (Netherlands), URS (Italy), UF (Italy), KTH (Sweden), UG (Switzerland)			
Detailed description of project						Type of services provided					
<p>The ultimate goal of MUTATE was the creation of a set of tools, designated MUTATE Bundle, which would allow the development of Web Based Advanced GIS Training and Education; for more details view <a href="http://www.ess.co.at/MUTATE/">http://www.ess.co.at/MUTATE/</a></p> <p>ESS contribution included the integration of several web-based spatial dynamic simulation models to demonstrate the coupling of dynamic PDE based simulation, and GIS for data processing and display.</p> <p>Training courses include the topics around spatial analysis, dynamic environmental GIS::</p> <ul style="list-style-type: none"> <li>- Air quality management and modeling</li> <li>- Technological risk analysis</li> </ul>									<p>ESS developed interactive spatially distributed environmental simulation models on air quality management and risk assessment for the integration into the MUTATE courses.</p>		


**IQEM: EUREKA E!1892 - Integrated Quality and Environmental Management**

Ref no (33)	Project title		IQEM E!1892 - Integrated Quality and Environmental Management								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Austria, Portugal	128,000	100	3	EUREKA Euroenviron	FFF	1999	N/A			
<b>Detailed description of project</b>						<b>Type of services provided</b>					
<p>IQEM was a bi-national project under the EUREKA EUROENVIRON umbrella of EUREKA, in collaboration with a Portuguese SME.</p> <p>The aim of the IQEM project was to develop, within a flexible artificial intelligence environment, a modular set of integrated tools for quality control procedures, environmental management, and safety management an intranet/extranet environment for combined ISO 9000, ISO 14001, EMAS and safety management; the use of rule-based expert systems (first order production rules) for screening and scoping level EIA and related environmental management schemes based on a hierarchical checklist evaluation structure was explored, and interactive tools to support the assessment procedure in close conjunction with total quality management concepts were developed and tested.</p> <p>for more details visit: <a href="http://www.ess.co.at/IQEM/">http://www.ess.co.at/IQEM/</a></p>									<p>Development, implementation and testing of rule-based (backward chaining, first order logic production rules) expert system for the evaluation of hierarchical assessment checklists for EIA, EMP according to ISO 14001, EMAS, and integration of dynamic impact simulation models in the inference and assessment system.</p>		


**SIMTRAP: Dynamic Simulation of Traffic and Urban Air Quality**

Ref no (34)	Project title		SIMTRAP – ESPRIT 22689: Dynamic Simulation of Traffic and Urban Air Quality								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Austria, Germany, Italy, Netherlands, UK	2,000,000	3 (EUR 67,400)	4	EC DGIII	EC DGIII	1997/1999	PTV , GMD (DE), ESS, Unselde , TU (AT), USSL (IT), HC, SSE (UK)			
Detailed description of project						Type of services provided					
<p>Within the framework of the ESPRIT Programme on High-Performance Computing and Networking for Information Management and Decision Support, SIMTRAP integrated advanced simulation models for dynamic traffic flow and 3D photochemical air quality modeling implemented on powerful parallel computers within a decision support framework that included GIS functionality, statistical analysis tools, an embedded expert system, and a multi-criteria optimization tool. An easy-to-use multimedia user interface and the fast and interactive response made possible by HPCN technology provided a powerful tool for urban traffic and environmental planners;</p> <p>for more details visit <a href="http://www.ess.co.at/SIMTRAP/">http://www.ess.co.at/SIMTRAP/</a></p>									<p>Development, implementation and testing of the graphical and interactive user interface and data management for the dynamic transportation model VISUM, and the 3D photochemical air quality model REGOZON.</p> <p>The development also included the implementation of alternative high-resolution air quality models to simulate near field traffic generated pollution based on a computation kernel (mixing zone) and convolution method.</p>		


**ADAPT: Building adaptive world-class SMEs**

Ref no (35)	Project title		ADAPT - BOOTSTRAP: Building adaptive world-class SMEs								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Austria, Sweden, Italy, Portugal, UK	7,000,000	10 (700,000)	5	EU, social funds	ESF	1997 1999	several European academic development partners			
Detailed description of project						Type of services provided					
<p>In collaboration with research institutions, government agencies, and industrial enterprises in the UK, Sweden, Portugal, Italy, Germany <b>ESS</b> participates in the <b>BOOTSTRAP</b> project of the EU's ADAPT Programme. The project was aimed at small and medium sized enterprises (SMEs) and their technological innovation. Using modern information technology, and in particular, Internet-based multi-media services based on a flexible client-server architecture, advanced information services can be introduced into the SMEs' business process. As a specific application domain, <b>ESS</b> addresses problems of <b>environmental management</b> through a concept of <b>learning on demand</b> through network accessible multi-media information services.</p> <p>For more details visit: <a href="http://www.ess.co.at/ADAPT">http://www.ess.co.at/ADAPT</a></p>									<p>Development, implementation of technology enhanced learning and training tools for SME in environmental management, energy and resource efficiency, environmental standard (ISO 14001, EMAS), European environmental legislations and Directives.</p> <p>Preparation of course material, conduction several test training sessions in environmental management.</p>		


**HITERM: High-Performance Computing for Technological Risk Management**

Ref no (36)	Project title		HITERM – ESPRIT 22723: High-Performance Computing for Technological Risk Management						
Name of legal entity	Country	Overall value (ECU)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members	
ESS GmbH	Austria, Germany, Italy, Switzerland, Portugal	2,830,200	28 (ECU 800,000)	5	EC DGIII	EC DGIII	1996/1999	GMD (Germany), SYRECO (Italy), LNEC (Portugal), FCCN (Portugal), PETROGAL (Portugal), ASIT (Switzerland)	
Detailed description of project						Type of services provided			
<p>Within the framework of the ESPRIT Programme on High-Performance Computing and Networking for Information Management and Decision Support, HITERM aimed at expanding the application of HPCN to decision support in new domains: the central focus was the interface between technological risk management and the environment .</p> <p>Using distributed parallel computing, the project aimed at reaching better-than real time performance for the simulation of accidental release of hazardous substances into the atmosphere, ground and surface water. HITERM supported risk assessment and planning, emergency response training, end eventually emergency management. Case studies in Italy, Portugal, and Switzerland;</p> <p>for more details visit <a href="http://www.ess.co.at/HITERM/">http://www.ess.co.at/HITERM/</a></p>						 <p>The screenshot shows a presentation window titled 'ESS - HITERM Slideshow'. The main slide features the HITERM logo, the text 'HITERM: Emergency Simulation and Assessment', and an aerial photograph of an industrial facility. Below the image, there is a small text box stating: 'HITERM is a fully interactive risk assessment and management system with a menu-driven graphical and symbolic user interface. The current Demonstrator (implemented for the Ponte S. Pietro industrial area in Lombardia, Italy) start-up screen offers a number of basic function groups as entry points, including a hypertext help- and explain function and on-line user manual.'</p>	<p>The main Project Objectives of HITERM were to design and develop:</p> <ul style="list-style-type: none"> <li>• HPCN methods and tools for time critical environmental applications, that are related to technological risk and emergency management;</li> <li>• a prototype system, based on client/server distributed parallel computing,</li> <li>• tools for the real-time visualization of these dynamic and spatially distributed stochastic model results (concurrent ensembles of solutions), to provide efficient interactive decision support tools for these applications, using a discrete multi-criteria optimization system, rule based expert systems, or neural nets where appropriate</li> </ul>		

**GAIA: Multi-media tools for environmental education**

Ref no (37)	Project title		GAIA – INCO 950809								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates start/end	consortium members			
ESS GmbH	AT, IT, UK, AR, PRC, EG, MX, TH, VE, ZM	700,000	31 (EUR 218,000)	6	EC DGXIII	EC DGXIII	1996 1998	ICCE (UK), CIRITA (IT), UB (AR), SEMTU (PRC), UA (EG), UNAM (MX), AIT (TH), CESIMO (VE), IES (ZM)			
Detailed description of project						Type of services provided					
<p>A Multi-Media Tool for Natural Resources Management and Environmental Education addressed both issues of environmental planning and management as well as information technology. Its primary objective was to build multi-media tools for environmental education and management, in a collaboration of 10 countries from Europe, Africa, Asia, and Latin America. In collaboration with two European institutions and university partners from seven developing countries, the project has developed a client/server multi-media system for environmental education, using the EARSS system as its starting point. Developed both as a workstations version and an internet server, GAIA provided access to numerous case studies and examples of environmental issues, problems, and solutions, embedded in the framework of Agenda 21;</p> <p>For more details visit <a href="http://www.ess.co.at/GAIA/">http://www.ess.co.at/GAIA/</a></p>									<ul style="list-style-type: none"> <li>To develop, in collaboration with the partners from seven developing countries, a multi-media framework and set of demonstration cases at a regional or local scale, addressing regional priority problems To implement this system at the participating institutions for both educational use and project activities, and obtain practical classroom and project experience in its application, as the basis of further, local developments.</li> <li>To provide wider access, and possibilities for active contribution, to the system through a wide-area network (Internet) World Wide Web implementation.</li> </ul>		

**AIDAIR: EUREKA E!1388 Air quality assessment and management**


Ref no (38)	Project title		AIDAIR – E!1388: Urban and Industrial Air Quality Assessment and Management								
Name of legal entity	Country	Overall value (ECU)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates start/end	consortium members			
ESS GmbH	AT, RU, CH, TR, CY, SE, UK, IR	2,500,000	40  (ECU 1,000,000)	5	FFG (AT), Several, under EUREKA national funding schemes	internal & several partners (CY, CH, TR)	1996 1998	IMM-RAS (RU), CUEH-LOGILAB , ISC, OCEN , DERIAZ , NEWTECH , CE (all CH), INREGIA (S), UKMO,U.ASTON (UK), U.ULSTER (NIR), SUMER (TR), ATLANTIS (CY)			
<b>Detailed description of project</b>						<b>Type of services provided</b>					
<p>ESS has initiated a EUREKA project that had received definitive EUREKA A status end of June 1995. Case studies are being developed for Vienna, Austria; Geneva, Switzerland; and Izmir in Turkey. The emphasis is on the integration of energy systems analysis and traffic models with a range of air quality modeling and assessment tools, as well as on-line sensors and monitoring equipment; <a href="http://www.ess.co.at/EUREKA/">http://www.ess.co.at/EUREKA/</a>. The project includes the design and development of large scale emission inventories and emission estimates for all case studies in the partner countries, including the cities of Geneva, Izmir, and Vienna (see attached emission inventory report cover for the MA22, City of Vienna).</p> <p>Project data and financial details available at EUREKA on-line at <a href="http://www.eureka.be/inaction/AcSearchProject.do">http://www.eureka.be/inaction/AcSearchProject.do</a> under project ID: 1388</p>									<p>Development, implementation an support of an air quality information system: applications include air quality monitoring and reporting, planning and policy analysis, energy and traffic planning, environmental impact assessment, and the operational management of pollutant emissions (emission inventories) to maintain ambient air quality standards, and demonstrate compliance.</p>		

**Öko-check: SME environmental management CD**


Ref no (39)	Project title		Öko-check: SME environmental management CD					
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates start/end	consortium members
ESS GmbH	Austria,	250,000	100	4	WiFi Vienna, Austria	WiFi, Vienna, Austria	1996 1998	n/a
Detailed description of project						Type of services provided		
<p>Öko-check developed an interactive training program and self-evaluation tools for small and medium sized companies (SMEs) for environmental management.</p> <p>The material includes (in German) background information from the Chamber of Commerce and its Economic research and Advancement Institute (WiFi), and include specific interactive tools for the self test to improve energy and resource efficiency, and the safe handling of hazardous material.</p>						<p>The project implemented the system on a CD that included a PC based web server and an HTML based content and Java/Javascript based tools;</p> <p>a parallel mirror web implementation was maintained for dissemination and as a publicly accessible test system for immediate feedback.</p>		




**ECOSIM: Urban Environmental Management, Environmental Telematics**

Ref no (40)	Project title		ECOSIM – EN 1006 (EN): Ecological and environmental monitoring and simulation system for management decision support in urban areas								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates start/end	consortium members			
ESS GmbH	Austria, Germany, Greece, Italy, Poland, UK	1,850,000	14 (EUR 262,000)	5	EC DGXIII	EC DGXIII	1996 1998	GMD, Stadtssenat Berlin, Schorling (DE), AUTH, UA , ENVECO, MoE (HE),CEO (IT), GUT, CG (PL), SSE (UK)			
Detailed description of project						Type of services provided					
<p>The project developed a demonstrator for an integrated environmental monitoring and modelling system for management decision support in environmental planning for urban areas with applications in Athens, Berlin, and Gdansk, integrating air quality simulation, coastal ocean water quality, and groundwater flow and transport modeling.</p> <p>ECOSIM was implemented under UNIX on workstation hardware with X11 graphics.</p> <p>For more details visit: <a href="http://www.ess.co.at/ECOSIM/">http://www.ess.co.at/ECOSIM/</a></p>						 <p>The screenshot shows the ECOSIM website interface. At the top, it says 'Environmental Software &amp; Services' and 'ECOSIM: Urban Environmental Management'. Below this, there is a brief description of the system and a list of navigation links: Project Description, ECOSIM Partners, Environmental Modeling Tools, Case Study Cities, Related WWW Links, The Ecosim Demonstrator, User Group Registration, System Framework, On-line Documents, and On-line Manuals.</p>			<p>The project developed and demonstrated an environmental decision support system based on a modular and distributed client-server architecture using wide-area network technology and the Internet to connect clients, monitoring networks, and high-performance model servers.</p>		

**XENVIS: X-based Environmental Risk Information System**

Ref no (41)	Project title		XENVIS: X based environmental risk information system								
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members			
ESS GmbH	Netherlands	220,000	100	6	State Institute for Environmental Health (RIVM)	State Institute for Environmental Health (RIVM)	1995/1998	N/A			
Detailed description of project						Type of services provided					
<p>XENVIS developed a technological risk management system for the Netherlands (Post-Seveso Directive), as a continuation of the original VROM project started in 1986 by the Ministry for Housing, Physical Planning and the Environment. ; for more details view <a href="http://www.ess.co.at/XENVIS/xenvis.html">http://www.ess.co.at/XENVIS/xenvis.html</a></p> <p>The project was initiated at the ACA (Advanced Computer Application) project group at IIASA (International Institute for Applied Systems Analysis), the precursor research group of ESS.</p>									<p>XENVIS offered a national level GIS with linked data bases for risk objects like Seveso-class chemical process plants; a hazardous chemicals data base was linked to the plant's safety audits and risk evaluations. Models for transportation route selection, tracing spills into surface water systems, and continuous and accidental atmospheric releases supported the risk assessment.</p>		

**GRIBS: Technological Risk Information System, Kanton Basel, Switzerland**

Ref no (42)		Project title		Technological Risk Management: The GRIBS information system				
Name of legal entity	Country	Overall value (EUR)	% carried out by legal entity (%)	staff provided	Name of client	Origin of funding	Dates (start/end)	consortium members
ESS GmbH	Switzerland	91,570	100	5	City of Basel	City of Basel	1995/1998	N/A
<b>Detailed description of project</b>						<b>Type of services provided</b>		
<p>GRIBS developed a risk information system for the Kanton and City of Basel (chemicals, biohazards, radioactivity). Designed for public access, the system provides information on the location, storage conditions, type and amounts of hazardous substances within the city and Kanton Basel.</p> <p>For more details visit:  <a href="http://www.ess.co.at/docs/Basel/kcb.html">http://www.ess.co.at/docs/Basel/kcb.html</a></p>						 <p>Development, implementation and testing of the GRIBS information system: data import and processing, data base design and data imports, development of the user interface and navigation, search and retrieval functions.</p> <p>Includes the implementation of a hazardous chemical data base and associated GIS for the display, retrieval and analysis of company (industrial and commercial) hazardous substances storage of data.</p>		