



# Intelligent documents support EU's BRITE project goals

To encourage a strong and connected digital economy in Europe, Adobe offers European Business Registers a common document exchange solution



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In 2005, the European Commission (EC) adopted an initiative called i2010, a comprehensive strategy leading toward the development of a European digital economy through regulatory instruments, research investments, and industry partnerships. The EC's goal is to establish Europe as an economically strong global region with high levels of innovation and employment by the year 2010.

As part of the i2010 initiative, the EC adopted a series of regulations to promote transparent financial markets, facilitate free movement of companies and services, enable e-procurement scenarios, and prevent financial crime and money-laundering across European borders. Implementing these regulations, as well as establishing the free flow of information necessary for them to be effective, will require an unprecedented degree of technical interoperability across legacy network infrastructures, administrative domains, and national and linguistic boundaries.

Accordingly, the EC has established Business Register Interoperability Throughout Europe (BRITE), a project within the European Union (EU) whose charge is to develop a technology infrastructure to exchange data and documents between EU Business Registers. (Business Registers are public administration authorities that are in charge of company registration within the EU member states.) BRITE is working to implement a uniform information and communication instrument that enables Business Registers to easily exchange data and documents in a fully electronic way.

To support BRITE project goals, Adobe offers interoperable and simple-to-use document exchange solutions that enable more secure information sharing through a common messaging format. Intelligent documents based on XML and Adobe® PDF technology can help create a bridge between legacy systems and the new BRITE infrastructure and connect information across domain boundaries, national borders, and languages.

## The BRITE project

BRITE is a project funded by the EC that involves a consortium of organizations, including Business Registers within Europe, chambers of commerce, universities, corporations, and IT companies from around the world (including Adobe). It was established to develop an interoperable workflow model that will enable Business Registers to exchange data and information across the EU. BRITE will develop a uniform information, communication, and technology service platform based on the workflow model and implement a management and delivery instrument that will allow Business Registers to interact smoothly across the platform.

The BRITE model, platform, and instrument will extend interoperability among Business Registers, businesses, and other public agencies and help Business Registers respond to evolving EU-wide Company Law.

### **The role of Business Registers**

As national borders are lowered and commercial and business laws are harmonized across the EU, a common EU Company Law is emerging that is designed to facilitate the free movement of business and services within the EU while ensuring financial transparency. Business Registers are among the public agencies most deeply affected by provisions of EU Company Law.

Within the EU, Business Registers are one of the first mandatory points of contact that companies have with public administrations. Existing companies are typically required to register and provide financial information to a local Business Register once a year. Under the new EU Company Law, entrepreneurs may now freely create a new European Company (a Societas Europaea), transfer a company seat to another member state, open company branches, or merge with companies in other member states. For each of these business changes and transactions, companies must register with local Business Registers.

These new EU-wide business opportunities impose new requirements and service obligations on the Business Registers. As EU Company Law supersedes national laws, Business Registers are instrumental in implementing this new body of law and are among those public agencies most deeply affected by it. In an enlarged EU, where companies can move freely, Business Registers must interact across borders and exchange company registration information without administrative, technical, cultural, and linguistic barriers. Each Business Register must be able to communicate with Registers in other EU member states and to interpret company registration information from all other member states.

These new requirements and services present Business Registers with numerous challenges and obligations. They must adapt to changes in EU legislation and remain poised to take action to accommodate the new legal landscape. Business Registers are also the focus of increased activity in electronic filing, digital signatures, data access, and data security across borders and domains. Growing regulatory demand for transparency and fraud prevention will place greater demands on Business Registers and highlight the need for a seamless exchange of financial information.

Clearly, Business Registers are being asked to play a greatly enhanced role by the new EU Company Law as they become the interface between businesses and EU policies and regulations. Yet, there is no existing EU-wide infrastructure or technology for enabling Business Registers to conform to the new “borderless” EU regulations in a coordinated manner. BRITE’s role, therefore, is to develop and pilot organizational, communication, and technical solutions for Business Registers active in cross-border business registration and related e-government areas such as financial transparency, financial crime prevention, and e-procurement.

### **BRITE infrastructure requirements**

BRITE’s scientific and technical objectives are to develop, demonstrate, and implement an advanced, innovative interoperability model, IT and communications platform, and data management instrument for Business Registers. One of the chief challenges of developing this infrastructure is the high degree of interoperability required by such an extensive information network. BRITE will need to address cross-border interoperability of business registration at all levels: abstract, organizational, technical, legal, strategic, and managerial. It will also address interoperability across domains, such as the ability to freely exchange data and information between Business Registers and other public agencies in e-government infrastructures. The BRITE model and the technology platform need to provide easy ways to deal with new legislation and other regulatory changes, which may require the platform to be extended to other public administrations or private entities.

BRITE will require research in knowledge management, advanced IT engineering and prototyping, business analysis, service deployment, and marketing to produce a model that is accurate, easy to implement, scalable, and adaptable. Workflow models must be able to deal with hierarchical, cross-organizational, and cross-domain transactions as required for public service providers in compliance with EU law.

### **Adobe solutions help Business Registers:**

- Take advantage of collaboration and shared document review by combining synchronous and asynchronous collaboration tools
- Locate, complete, and route case-related information across domains and borders
- Integrate text, XML data, images, and other data into existing legacy systems, reducing record redundancies and improving processes

With Adobe software, Business Registers can easily share interactive intelligent documents with companies and vendors without requiring them to invest in costly applications.

Adobe Reader® is free software that lets people view, interact with, and print Adobe PDF files on a variety of devices and operating systems. To date, more than 800 million copies of the software have been distributed.

Adobe security policies deliver document control, rights management, encryption, digital signatures, and document certification services that travel with a document wherever it goes. Agencies can control who can open, view, print, copy, or modify a document, whether the document is online, offline, or outside the network.

Governments often have an enormous legacy of standalone applications and data storage silos based in relational databases and data modeling architectures that make it difficult to access, share, and update information between public agencies and businesses. Providing improved tools that help bridge legacy systems within and across organizations is an important aspect of BRITE technical development.

The BRITE infrastructure will be adaptable and expandable, while featuring advanced search and data mining capabilities. It will use information processing concepts such as knowledge representation, which draws on the structure of objects and documents to reach conclusions within a knowledge-oriented methodology, and domain ontologies, which structure data by relationships between concepts, enabling machine logic to share and reuse knowledge.

Data representation and exchange will be analyzed using emerging standards, and communication between the modules will be carried out using web services. Since the services will operate in domains formally defined by ontologies, the system will possess characteristics of the semantic web, a framework that allows data and data relationships to be shared and reused across applications and organizational boundaries.

The development of BRITE's integrated but partially distributed system will be a challenge, as the infrastructure must meet high standards of reliability, privacy, and service quality. Many services must support long-term transaction records, so the system will need to include persistence mechanisms to prevent data loss or corruption. Techniques such as digital signatures, authentication, and document certification must be employed to satisfy security requirements, in addition to traceability (of all process states) and advanced monitoring functions.

BRITE also aims to implement its model, platform, and instrument without undue technical complexity, as this might hinder the compliance of younger EU member states with less robust IT infrastructures. So while requirements for the BRITE technical components are complex and demanding, it is imperative that the BRITE management and delivery instrument, that is, the tools, interface, and forms that provide the user experience, be simple and intuitive to use. The end-user application must allow information and business data to be captured in a way that is easy to use and in a format that can be transformed to the BRITE messaging standard with minimal effort.

### **Adobe intelligent documents and BRITE**

The Adobe technology platform offers a powerful standard for developing and deploying the BRITE instrument interface, tools, and applications. The combination of Adobe PDF and XML technologies enables the creation of intelligent documents, which empower government agencies and businesses to convert static documents to interactive electronic files.

Within BRITE processes, intelligent documents enable:

- Capture of business data in a way that is easy to use by companies and in a format that can be transformed to the BRITE messaging standard with minimum of effort
- Support for emerging and existing standards for business reporting and electronic filing, such as XBRL, which captures data in a format that ensures standards compliance and transforms data to suitable presentation formats while retaining links to the underlying data elements
- Production of documents of record at key stages within Business Register processes to fulfill legal requirements, for example, document archiving in a recognized final format, such as PDF/A
- Digital signing of documents with human-readable representations of the data to be signed
- Secure transmission of electronic documents (from Business Register to business, business to Register, and business or Register to other public administration)
- Document assemblies, in which documents from different sources are combined into a single electronic dossier

- Support for mixed-mode processes, for example, the ability to process the same data for different presentations (printed or electronic versions of the same documents)
- Implementation of low-level workflow processes that are specific to individual Business Registers but that need to tie in with high-level BRITE workflows

By combining business logic and data exchange capabilities of XML with the visual fidelity, security, and reliability of Adobe PDF, intelligent documents help organizations streamline information exchange, increase operational efficiencies, reduce costs, and meet compliance mandates.

### **Common Business Dossier for e-procurement**

Public e-procurement is one potential new service area introduced by the BRITE initiative in which intelligent documents can help provide an easy-to-use, interactive interface for Business Registers and companies while delivering underlying functionality, such as data capture, retrieval, and processing. The following scenario is an example of how the BRITE infrastructure can be used to exchange information and provide practical applications outside of the official BRITE domain.

In this service case for e-procurement, Business Registers are called on to create a Common Business Dossier (CBD) for companies registered with the Business Register. A CBD represents an aggregation of a company's official registration records, selected financial information, and other official documents gathered into a single container. The CBD collects, in one document, the documents and information required to fulfill strict EU requirements when taking part in a public e-procurement process. For example, if a private company within the EU wants to place a bid for a public procurement, the public administration that issues the tender will demand certain items of information from companies before accepting their bid. For instance, bidding companies will need to prove that they are legitimate, financially stable, and have an up-to-date entry in the relevant Business Register.

Today, the method of collecting and collating all this information into a single dossier is largely manual. A bidding company has to approach the public institution that issued the procurement request and deliver the required documents in paper form. This process must be repeated every time the company wants to bid for a public contract. If the contract is tendered in a country other than the company's registered place of business, transactions become even more complex. Very often, all documentation has to be translated, certified, and notarized before delivery, which is time-consuming and expensive.

An electronic CBD enables EU-wide public e-procurement scenarios by allowing bidders to deliver the required documentation to procurers using the automated processes inherent in intelligent PDF documents. Process management technology within intelligent PDF documents enables the CBD to aggregate information drawn from stored public records, such as official business registration records and indicators of financial performance. This information can then be used to populate new intelligent documents that meet the information requirements of an EU public procurement process. Information from existing but disparate entities flow into a single document, powered by XML and Adobe PDF technology.

The CBD can also compile dynamic information drawn from live data sources with XBRL, which can be used to produce reports and various forms of analysis. Digital signatures can be embedded in the document, and dates and timelines can be used to control document versions. Adobe software can also provide a workflow for documents during the e-procurement process, which removes the need to re-key or print documents, reducing errors and costs.

In addition, an electronic CBD enables e-tendering, wherein companies tendering a bid can create and check their official documentation, current financial status, and the necessary qualification conditions. Procurers can use e-evaluation support during the assessment and evaluation process to check and acquire information about tenderers.

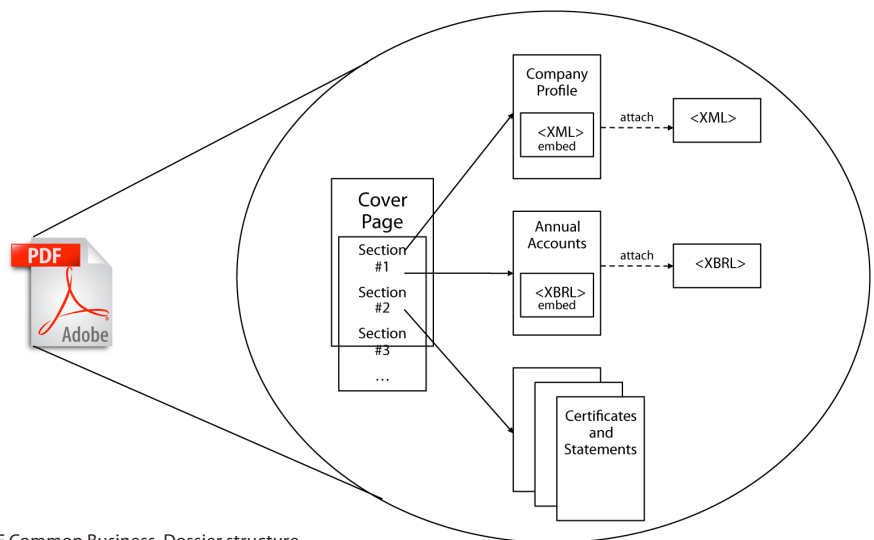
Intelligent documents also support BRITE e-procurement requirements by enabling human interaction with digital documents. That is, the CBD is readable and printable, navigable, and

Adobe technology meets challenging e-government mandates to enable public agencies to interact with constituents, businesses, and other government agencies more easily and securely.

available in multiple languages. The technology provides a three-tiered separation between presentation, business logic, and data layering, which increases system security, scalability, and flexibility. Intelligent documents provide confidentiality through controls on usage of CBD components, data sources, and certification of digital signatures.

Throughout this scenario, the intelligent PDF technology that supports CBD e-procurement provides much more than a simple presentation format. It enables an automated process to produce a generic document container that serves as an electronic dossier, pulling together many types of information and data into a multisourced digital structure. Once assembled, the information in this dossier can be easily shared, exchanged, or reused in other automated processes. This can help accelerate the procurement and enable the collected information to be used for more than one tender. In addition, with cross-border cooperation between Business Registers, dynamic reuse of information within an electronic CBD would allow companies to more easily bid for contracts in multiple EU countries. Not only does the electronic CBD replace a largely manual, paper-based process, but the automated processes embedded within the intelligent PDF workflow effectively dissolve borders, as well as removing the need for translation and certification.

Intelligent documents can be accessed via the Internet or e-mail and integrated with advanced forms-processing features, powerful business logic capabilities (such as calculations, routing instructions, error checking, and data validation), and business process software such as automatic content analysis, knowledge extraction, and knowledge transfer.



BRITE Common Business Dossier structure

## Conclusion

The need to collaborate securely and share information is becoming urgent for governments and public agencies at national, regional, and local levels. Public entities require a robust and affordable infrastructure in which to share data in a controlled manner, with the appropriate access controls attached to the data. Key elements of such an infrastructure include appropriate levels of security to allow document control and secure collaboration across the web; platform neutrality, which allows employees from many agencies using many devices to share information across technology boundaries; and low cost and flexibility of platforms and solutions.

The goal of the BRITE project is to establish a new EU-wide technical infrastructure that allows businesses and public entities to respond effectively to regulatory compliance, market requirements, and the free movement of business and service across the EU. Advancing these solutions in the EU's multilanguage, multicultural environment poses unique research and development challenges. The Adobe PDF technology provides the BRITE project with a powerful and near-ubiquitous tool to create intelligent, interactive, and interoperable documents that enable effective e-government services and reporting capabilities across borders, domains, and software environments.

