

Introducing Multefile™

Multefile™ is smartcard middleware that can be found on smartcards, terminals and in the back office of a smartcard system. From definition and development, through to deployment and post issuance maintenance and management, Multefile™ offers benefits in terms of reduction in the total effort and cost of operation for a smartcard scheme, compared to the conventional approaches offered by the Smartcard Industry.

Data-driven development tools facilitate a quicker time to market. Updates to the system can be implemented and incorporated into the existing card user population with minimum effort and disruption. Due to the fact that Multefile™ has automated many of the steps that are traditionally performed manually, the time taken for the whole application development and management process is reduced.

Multefile™ enabled smartcard schemes are far more competitive by adapting to change as a matter of course instead of as an exception and most often, costly event. Any organisation can now devise, implement and manage its own smartcard products by circumventing prolonged development processes.

Integration

The Multefile™ components smoothly integrate with legacy installations and systems to provide its advanced featured terminal and card application management. The highly modular Multefile™ approach allows you to adopt any part of our product suite to suit your business needs. This is because each of Multefile's™ components can be viewed as products in their own right.

Multi-application

Multefile™ enables ultra rapid application development by supporting an extensive range of features and functions commonly required by a wide variety of applications. These may be from the simplest to the most complex, from Transport to Payment, from ID to Health or any combination thereof.

What does Multefile™ consist of?

Multefile™ consists of a suite of software tools, and run-time code modules, whose behaviours are configurable, in other words

"Model-Driven". These modules are "platform agnostic" and are based on open standards. Their key advantage is that most of the software needed by a smartcard or terminal is already written and embodied within them, leaving only analysis of the business's requirements to be embodied in the Model, which drives their configurability.

- Multefile's™ 'on-card' modules are available as application software running on the industry's standard multi-application card platforms, MULTOS, JavaCard, as well as on Ecebs own low-cost security assured 'MFOS' card operating system. These 'on-card' modules appear as applications to the card operating system, but are in fact "application environments" or "frameworks" within which multiple applications can be created and then post-issuance maintained ultra rapidly. These frameworks encompass a rich library of functions compliant with major industry standards for a range of end applications such as, but not limited to, ID, Health, Ticketing, and Payment. However these on-card frameworks also include expansion API's to allow even more functionality to be "plugged-in". This future-proofs your deployment even more and even enables third party card software developers to add value. Only now, by using Multefile™ as their platform, productivity soars as Multefile™ provides all the generic features to their custom application, obviating the need to manually develop the same features over and over.

- Multefile's™ Terminal components are written in both C# and Java thus taking full advantage of the large range of both sets of terminal platforms.

These terminal components are available as thick client, thin client or browser based. They provide a highly modular Terminal SDK that is both multi-card and multi-application resulting in what is essentially a universally configurable terminal for smartcard based applications. And because the same Model Driven Architecture is used to configure the terminal as well as the card, Multefile's™ Terminal Middleware can interoperate with any ISO 7816-4 industry standard 3rd party card, concurrently with any other, be it a Multefile based card or not. This brings dynamically manageable interoperability to both cards and terminals!

Multefile™ components are fully industry compatible and support a rich set of standard features. They take best advantage of EMV, ISO 7816, Java, .NET, SQL, UML and XML, thus facilitating legacy system interoperability. However, any new custom commands and functions can still be added in a fraction of the time compared to traditional approaches, by the developers of your choice, and with minimum disruption to your operations.

How do you use Multefile™?

Multefile™ comes with high-level development tools that translate your business's functional requirements into configuration data that the run-time code modules understand. These tools have user-friendly graphical user interfaces based on point and click principles. Assuming good knowledge of the end application's requirements, learning to use these tools is no harder than learning advanced design of spreadsheets.

The resulting translation of the end-application's functional requirements is used to configure the run-time code resident on the card, and on its corresponding point of service or terminal. These requirements are loaded on the card at the personalisation stage of manufacture, but they can be securely added or changed post-issuance.

How does Multefile™ manage applications in the field?

Multefile™ includes automatic version control and management for the applications' Model. Any changes made to an application using Multefile's development tools are captured and compared with the previous version of its Model and a difference configuration script generated. This script can contain any secure data for the card (such as new keys or policies) and the corresponding configuration difference in the Model that the terminal uses directly. These are distributed to the terminal, which then securely updates any cards that are subsequently inserted without disturbing incumbent data or application configurations. This approach works for terminals that are both off-line as well as on-line.

Other benefits Multefile™ brings:

- Card Management Systems capabilities are greatly enhanced. They can now directly address card and terminal application behaviour.
- System Integrators can deliver and manage change to card and terminal applications in a fraction of the time and with a fraction of the effort and cost when compared to conventional approaches and technologies.

Multefile's™ architecture has been designed to radically lower the total cost of ownership and improve the flexibility, adaptability and saleability of any smartcard scheme, thus radically improving the business case for smartcard deployment.

For more information please visit <http://www.ecebs.com>