Debt Management and Financial Analysis System

Version 6:
the solution for
debt management offices

MFAS

CONTENTS

THE PROGRAMME >>>

Integrated as a key activity of the United Nations Conference on Trade and Development (UNCTAD), the Debt Management and Financial Analysis System (DMFAS) Programme has been successful in helping governments improve their capacity to manage debt since the early 1980s.

The overall objective of the DMFAS Programme is to strengthen the capacity of developing countries and countries with economies in transition to manage their debt in an effective and sustainable way, in support of poverty reduction, development and good governance. This objective is supported by numerous United Nations General Assembly resolutions on debt and development and other international global initiatives such as the Millennium Development Goals.

The DMFAS Programme offers countries a set of proven solutions for improving their capacity to handle the management of public liabilities and produce reliable debt data for policy-making purposes. This includes its specialized debt management software, also called DMFAS, as well as advisory services and training activities in debt management. The Programme has so far provided its products and services to 105 institutions in 69 countries.

Recognition of the high relevance of DMFAS by independent evaluators

"*DMFAS clearly fills a need in many user countries which report significant progress in debt recording and debt statistics. Debt-recording systems such as DMFAS are a crucial building block for debt analysis, strategy and sustainability.*

Because of DMFAS, debt management capacity has improved in the DMFAS user countries and has contributed to good governance especially in terms of improved transparency and the government's accountability of public finance."

Mid-term review of DMFAS Programme, Final Report, December 2009, ECORYS Nederland BV

THE SOFTWARE >>>

DMFAS software is designed to help countries manage their external and domestic public debt. DMFAS manages debt obligations such as government debts, government-guaranteed debts and on-lending debts, as well as grants and debt reorganizations. It can also be used to monitor private non-guaranteed external debt.

DMFAS fully meets the comprehensive needs of a debt management office, whether front-office (issuance of debt securities), middle-office (analysis) or back-office (registration and management of operations) tasks.

Usually installed in the Central Bank and/or Ministry of Finance, it provides accurate and timely information for debt management. DMFAS enables debt officers to carry out the following operations:

- Record all information concerning loans, grants and debt securities, including their possible relationship to projects and to different national budget accounts
- Create and update estimated disbursements automatically
- Calculate all amortization tables automatically
- Record real drawings, real subscriptions and debt service operations
- Identify loans where debt service is in arrears and calculate late interest
- Produce a wide range of standard and customized reports, including reports for validation, control and statistical bulletins
- Perform analysis of their debt portfolio and build debt strategies

What is DMFAS 6?

DMFAS 6 is the sixth major release of the DMFAS programme software since 1982. Developed using the latest technology, it offers many new features and all the existing functions of the previous version (5.3) for all levels of users.

Why a new version?

This new version is a response to the following developments:
- New practices in debt management offices
- New types of organizations in debt management offices (back, middle and front office)
- Advances in computer technology
- Demands and needs of DMFAS client institutions

The key benefits of DMFAS 6

FOR MANAGERS	FOR END-USERS
DMFAS can be run as a stand-alone system, on an intranet or an extranet, on most operating and network systems. DMFAS offers powerful analytical and managerial tools for portfolio analysis and reporting.	The general user-friendliness of DMFAS helps its users become quickly operational: even with minimal training, beginners can build the DMFAS database and generate reports. With its flexible interface, DMFAS allows for easy customization; all codes and field names can be modified and translated by authorized end-users.
A robust security system enables managers to assign specific privileges or restrict rights to users and user groups.	DMFAS is currently available in English, French and Spanish. Extensive documentation is provided on all modules including a contextual online help system.

Robust debt management capabilities

Once the database has been filled with information relating to loans, debt securities and grants, DMFAS becomes a very powerful tool, greatly enhancing the autonomy and management of a debt office. As the system processes huge amounts of information on debt, more time and energy can be deployed on analytical and management tasks. For instance, DMFAS allows debt managers to do the following:

- Actively monitor the timing, amounts and terms of a country's external and or domestic liabilities
- Test the sensitivity of debt service to changes in interest rates and exchange rates
- Produce drawing requests and payment orders

WHAT'S NEW IN VERSION 6? >>>

Shown below are the new components of DMFAS 6, which integrate all the existing functions in version 5.3, as well as many improvements.

NEW MODULES	Debt Securities module Auctions module Debt Reorganization module Private Non-guaranteed External Debt module Short-term External Debt module Analysis module: - Debt Ratios - Sensitivity (exchange rates/interest rates) - Financial Indicators (average life, average maturity, average interest based on outstanding or face value, average grace period and grant element)
NEW FEATURES	Prepayments Business day conventions
NEW TOOLS	Query tool Control Panel
NEW INTERFACE	Portal Graphical user interface

New modules

The **Debt Securities** module is based on an instrument approach. It is used to register all types of debt securities from short-term to long-term debt securities.

The **Auctions** module is intended for institutions that do not already have such a facility. This module is used to record bids on money market instruments, as well as notes and bonds on a single price or multi-price basis.

The **Debt Reorganization** module can handle all types of debt reorganization such as financing, rescheduling, forgiveness, debt conversion and prepayments or buybacks. The module handles all phases of the reorganization and maintains a relationship between the old debt and new debt.

DMFAS 6 satisfies the reporting requirements for recording private **non-guaranteed external debt**.

Another new DMFAS 6 module is designed to record **short-term external debt** with an original maturity of one year or less.

In the area of analysis, DMFAS 6 includes new features, such as **debt ratios**, which are intended for middle-office debt managers. Debt ratios indicate potential debt-related risks and fall into three broad categories: public-sector debt, external public-sector debt and domestic debt.

Another new analytical feature in DMFAS 6 pertains to **exchange rates** and **interest rates sensitivity**. This type of analysis is used to make projections about how changes in interest rates and/or exchange rates affect a country's debt service and consequently, its debt sustainability. It can be used to build scenarios or "what if" simulations for evaluating different refinancing strategies.

New features

Debt service operations in DMFAS 6 have been extended to include **prepayments**, which is the partial or full repayment by the borrower, perhaps at a discount, of an outstanding debt obligation in advance of the maturity date.

DMFAS 6 includes **business day conventions**, which refer to the rules for adjusting any payment date if the date falls on a date that is not a business day, for example, a holiday. The feature entails rules or conventions for adjusting the payment date of a maturity.

| Debt Securities |
| --- |
| Money Market Instr. - Discount |
| Money Market Instr. - Interest Bearing |
| Other Money Market Instruments |
| Bonds and Notes - Zero Coupon |
| Bonds and Notes - Fixed Rate |
| Bonds and Notes - Floating Rate |
| Bonds and Notes - Stepped |
| Bonds and Notes - Annuity |
| Bonds and Notes - Perpetual |

WHAT'S NEW IN VERSION 6? >>>

New interface

The **Portal** is a web interface that provides centralized access to DMFAS 6. It is the starting point for working with the software and provides access to:

- DMFAS 6 modules
- The latest news and information about DMFAS 6
- Useful links to websites and other resources relating to debt
- Secure access to modules based on the profile and privileges defined in the DMFAS Security module

In addition, the user interface has been fully redesigned and offers improved navigation features.
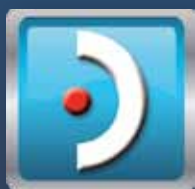
New tools

Tool for query files

A new tool is available for generating query files in DMFAS 6. It is an external, open-source application. Users of DMFAS 6 also have the option of continuing to use Query Builder from outside the DMFAS software.

DMFAS Control Panel

The **Control Panel** is a technical and administrative tool for the installation, maintenance and administration of DMFAS 6. It contains many functions found on the support menu of version 5.3.

The Control Panel is used to perform the following tasks:
- Configure DMFAS 6 installation and module parameters
- Establish a cut-off date for the system
- Set up the security for users and groups as well as control/restrict access rights to functions
- Customize the interface

Improved security

Security has been reinforced to ensure the integrity and confidentiality of data at all times. The DMFAS 6 **Security** module offers a highly structured yet flexible system to administer users and user groups and to control and/or restrict access rights to the software modules and functions.

The new **Auditing** module offers an extensive tracking facility of all database operations carried out by system users. The parameters can be defined to set or restrict the structured query language, or SQL, operations that appear in the internal audit log automatically generated by the Oracle database.
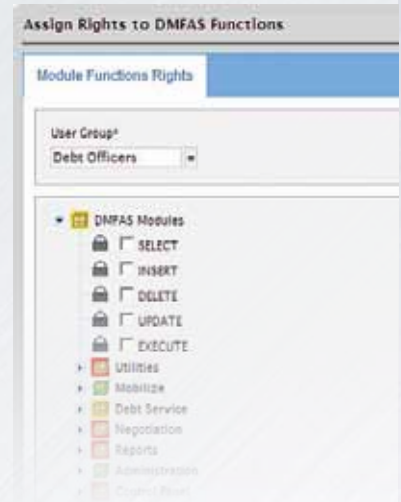
Technical characteristics

DMFAS 6 is web-enabled, which means it can be accessed through a browser, for example, Internet Explorer. Web technology enables remote access to the application. DMFAS can be installed as a stand-alone system, an intranet or an extranet.

Flexible installations make it easy to set up regional centres, decentralize debt management activities and share resources between institutions such as the Ministry of Finance and the Central Bank.

In a web-based application such as DMFAS 6, the three tiers are implemented by means of the following tools:

- A front-end web server
- An application server for processing
- A back-end database comprising the data sets and the relational database management system, or RDBMS

3-tier architecture was developed to address the following concerns:

- To lighten the workstation
- To handle different platforms such as servers, clients and languages
- To introduce "thin" clients
- To improve the security of data by eliminating the link between the client and data

Business Logic Tier

Client/Presentation Tier

Data Tier

DMFAS is a complete debt management solution that delivers powerful yet easy-to-use modules and features (see opposite).

Negotiation

Negotiation is the phase of the life cycle that occurs prior to the administration of debt securities. The Auction module is used to record bids on money market instruments and on notes and bonds, on a competitive or non-competitive basis. The data is imported into the debt securities module where it appears as the subscription data for the instrument.

Administration

The modules in the Administration category are used to register the following:

• Loans and debt securities
• Grants or on-lending agreements
• General agreements
• Debt reorganization

In the **Loans** module, users enter general information about the loan agreement such as the parties, the reference number and the date of signature. They also enter specific information such as the principal, interest and commission terms.

The **Debt Securities** module is based on an instrument approach. It is used to register all types of debt securities from short-term to long-term options. The module is organized into the following categories: money market instruments, bonds and notes, promissory notes and others.

For **Private Non-guaranteed External Debt**, DMFAS 6 lets users enter aggregated data; in addition, it offers two modes for recording data: either manual entry or imports from Excel.

THE MODULES >>>

The **Short-term Debt** module is specifically designed for recording short-term external debt with an original maturity of one year or less as aggregated data; it also allows manual entry or imports from Excel.

The **Grants** module is used to record general and specific data relating to a grant.

The **General Agreements** module enables users to enter general information about frame agreements that are linked to related credit agreements; this information can then be linked to the individual agreements arising from them.

The **Reorganization** module can handle all types of debt reorganization, including refinancing, rescheduling, forgiveness, debt conversion and prepayments or buybacks for debt securities. The module handles all phases of the reorganization while maintaining a relationship between the old and new debt. Users record here the general information on the Paris Club Agreed Minute and the resulting bilateral agreement.

The **On-lent Loans** module is used to record on-lent loans and their relationship with the original loan.

Reference Files are the starting point for users' work in DMFAS. They contain detailed information that are referenced from many DMFAS windows. They include essential and optional data about the participants, exchange rates, budget lines and financing relating to an agreement.

Mobilize

The **Mobilize** category is where **real drawings** on loans or grants are recorded as well as real subscriptions for debt securities.

Debt service

With the **Debt Service** modules, users can record debt service operations on principal, interest, commission and penalty interest.

The **Budget Period** Allocations module is used to define budget periods and budget allocations.

Reports

With its powerful **Reports** module, DMFAS 6 is capable of generating a wide range of standard and customized reports using a new reporting tool. These include reports on loans, debt securities, grants, projects, general agreements, reorganization agreements and reference files.

Standard Reports are predefined reports delivered with the system. These are operational, analytical and managerial reports already created by the central team of the DMFAS Programme.

User-defined Reports are reports created and generated by DMFAS users in any given country. These can be operational as well as analytical and managerial reports. A user-defined report can be based on a DMFAS standard report; this means that it can be copied and modified as needed.

Data Validation reports are predefined and are used to check the accuracy and consistency of the data recorded in the database.

Statistical Bulletins refer to a library of reports that could be included in a debt statistical bulletin.

World Bank reports make it possible to generate forms 1, 2 and 4 of the World Bank Debtor Reporting System.

Analysis

In the **Analysis** category, DMFAS 6 includes new features intended for middle-office debt managers.

Debt Ratios are measures used to indicate potential debt-related risks. They fall into three broad categories: public-sector debt, external public-sector debt and domestic debt.

Sensitivity analysis is used to make projections on how changes in interest rates and/or exchange rates would impact a country's debt service and thus its debt sustainability.

Financial Indicators are key analytical measures used to evaluate debt; they include:
- The grant element, which measures the concessionality of a loan
- Average terms with respect to interest rates, maturities, durations and grace periods for a selected groups of loans
- Scenarios or "what if" simulations for evaluating different refinancing strategies

The Debt Sustainability Interface serves as an interface between DMFAS and the World Bank Debt Sustainability Model application.

The Risk Analysis module interface serves as an interface between DMFAS and the Medium Term Debt Strategy model from the World Bank and the International Monetary Fund.

Training

Training is a key factor in the successful long-term use of DMFAS 6. Depending on the level of development of the debt management office and the needs of its staff, the DMFAS Programme can adjust any training programme to suit the specific needs of a wide range of users. The training modules are organized by technical and functional concepts. The DMFAS methodology is hands-on, practical and encourages best practices in the field.

Technical training

Intended for the database administrator and local IT staff, technical training covers all the technical aspects of the software including installation, configuration and setting of parameters. Among the skills taught are the following:

• The database conversion process
• The new installation procedure
• Configuration of an application server
• Operation of an Oracle database
• Back-up and restoration of data

Functional training

Functional training targets an audience of current or future users of DMFAS 6 and requires familiarity with basic debt management concepts.

Upon completion of this training, participants can:

• Understand the life cycle of a debt instrument in DMFAS
• Grasp the basic functionalities of DMFAS 6
• Understand the classification scheme
• Use DMFAS 6 to record debt instruments, general agreements, grants, reference files and related transactions
• Employ DMFAS 6 to generate export files
• Work with new modules relating to debt securities, auctions, private non-guaranteed external debt, short-term external debt, debt reorganization, analytical features, and the new reporting tool

Further training

The DMFAS Programme offers debt managers additional workshops at basic and advanced levels even if they have not yet installed the system. Among the most important ones are workshops on debt data validation, the production of a statistical bulletin, debt portfolio analysis and seminars on how to develop a procedures manual.

Furthermore, training on how to link DMFAS 6 to other applications, such as integrated financial and management systems, is also available.

The Helpdesk

The DMFAS Helpdesk now offers a web-based system for tracking bugs, issues and enhancement requests that is available 24/7 to DMFAS 6 users.

They can always rely on the dedicated and friendly DMFAS Helpdesk to respond quickly to any urgent issues or inquiries they may have. Helpdesk staff can be conveniently contacted by telephone, e-mail or fax. This service is one of the components of the maintenance agreement between the national institution and UNCTAD.

Signature of a technical cooperation project with UNCTAD

All DMFAS installations are implemented through a technical cooperation project between UNCTAD and the government institution that requests DMFAS 6. After receiving a request from the government institution, UNCTAD will conduct a needs assessment during which a dedicated project manager will meet with the institution's staff to discuss challenges and requirements, as well as to recommend the activities to be integrated into a project document for subsequent signature and funding.

Once the project is set up and funded, DMFAS experts will carry out the installation of the Programme and conduct the necessary functional and technical software training.

Any government institution wishing to obtain DMFAS 6 should therefore contact the Secretary-General of UNCTAD or the Chief of the DMFAS Programme directly by telephone, fax or e-mail.

Project considerations

The normal length of a typical project can last from 6 to 18 months. It can be funded by the institutions themselves or by donors.

Regular project activities cover the installation of the software, as well training and assistance in its use to enable debt officers to establish a complete and up-to-date debt database. Costs will vary depending on the number of institutions per country, the objectives to be attained, the number of missions necessary, the type of staff involved and other factors.

Although it is the ultimate responsibility of the beneficiary institution to secure project financing, UNCTAD stands ready to assist the debt management office in identifying and negotiating the required resources while adapting the project proposal to fit the particular needs of the funding institution.

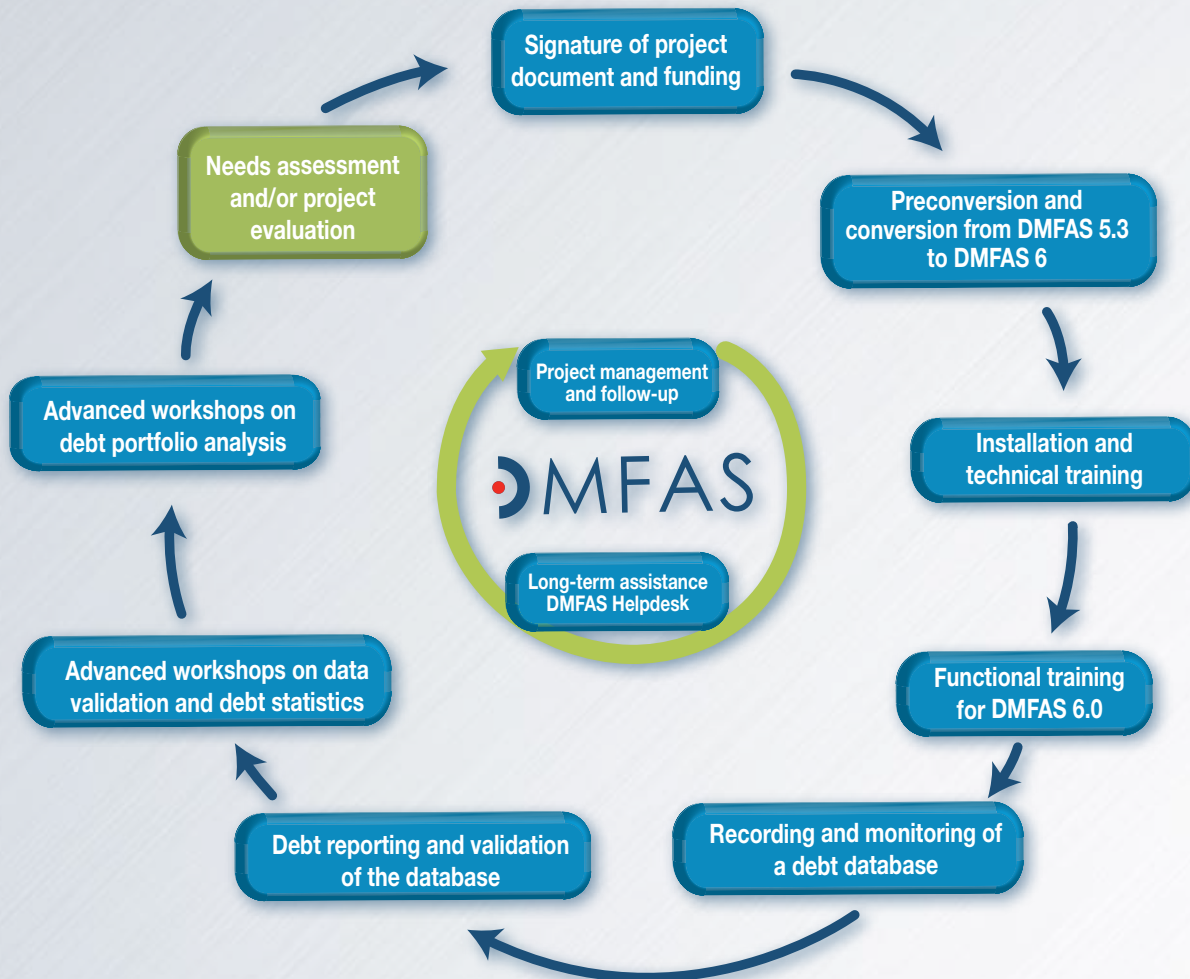The following is a typical cycle of a DMFAS technical cooperation project:

Signature of project document and funding

Needs assessment and/or project evaluation

Preconversion and conversion from DMFAS 5.3 to DMFAS 6

Advanced workshops on debt portfolio analysis

Project management and follow-up

Installation and technical training

DMFAS

Long-term assistance DMFAS Helpdesk

Advanced workshops on data validation and debt statistics

Functional training for DMFAS 6.0

Debt reporting and validation of the database

Recording and monitoring of a debt database

⟩MFAS

Contact us

For further information please contact your
DMFAS project manager or visit our website at
www.unctad.org / dmfas

You can also contact DMFAS headquarters at the following address:

The DMFAS Programme

UNCTAD

Villa le Bocage

Palais des Nations

8–14 Avenue de la Paix

1211 Geneva 10

Switzerland

Tel.: (41) 22 / 917 5924
Fax: (41) 22 / 917 0045
E-email: dmfas@unctad.org

UNITED NATIONS