



MS User Detailed Functional Specifications

UDFS v1.2

Author 4CB
Version UDFS v1.2
Date 12/08/2022

All rights reserved. Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

Introduction

The Eurosystem Collateral Management System User Detailed Functional Specifications (ECMS UDFS) describe all the features of the ECMS and the interactions of the ECMS Actors with it, focusing on Application-to-Application (A2A) communication.

This document is intended to guide the ECMS Actors to the proper understanding of the service and to offer all the information needed for the implementation of software interfaces on their side. The document provides detailed information on the ECMS functionalities based on the requirements described in the ECMS URD.

As to functional specifications, the UDFS document focuses on the provision of information to ECMS Actors to design and build the interface of their business applications with the ECMS (A2A), while the U2A dialogue with the ECMS and the GUI screens are described into the User Handbook (UHB).

The UDFS provides information to:

- Business analysts of the ECMS Actors, who find in the UDFS a description of the application processes and the information flows between their own business applications and the ECMS;
- Developers, who find in the UDFS the necessary information to design and build the interface of the ECMS Actors' business applications with the ECMS.

The document is divided into four chapters:

- The **first chapter** provides a full description of all the ECMS features and the related reference data, non-technical details concerning access to the service and connectivity, dependencies and interactions with other services, and support features. The background information provided in Chapter 1 guides the understanding of Chapter 2. Information provided in Chapter 3 on the ECMS feature is mainly user-oriented, but also includes some information on the internal ECMS processes, when relevant.
- The **second chapter** provides a formalised description of the (A2A) dialogues, which allow ECMS Actors' applications to interact with the ECMS. This part aims to provide an exhaustive description of the different (successful and unsuccessful) use cases ECMS Actors may face. This section guides the reader through the steps of the different scenarios – highlighting the actions undertaken by the ECMS and all the involved ECMS Actors. The following parts compose a scenario:
 - End-to-end description of the process – by means of activity diagrams and explanatory text.
 - Involved actors
 - Exchanged messages

The description of each step of the process includes an exhaustive list of all the checks performed by the ECMS. The detailed description of the business rules is reported in the list at the end of the document (fourth chapter).

- The **third chapter** provides a detailed description of all XML messages ECMS Actors may use to interact in A2A mode with the ECMS. Each message specification includes the following elements:
 - Reference name and identifier
 - List of fields included in the message.

Wherever a message or its fields are referenced throughout the document, only the reference name is used.
- The **fourth chapter** provides the description of the ECMS DWH, which collects through the Daily Data Feed (DDF) business information.
- The **fifth chapter** provides all the appendices which include:
 - List of ECMS Business Rules and Error Codes applying to incoming messages.
 - Reference Data Tables
 - Predefined Roles
 - Index of Figures
 - Index of Tables
 - List of Acronyms
 - List of referenced documents
 - Glossary

Reader's guide

The document is structured as to guide the readers through the steps of the whole A2A interaction and processing details.

Different readers may have different needs and priorities and may not need to read the whole book. For instance, “business reader” interested mainly in organisational issues may not wish to enter into the full details of each and every message description, but they would prefer going through a description of the application processes and the information flows between their own business applications and the ECMS. On the other hand, “technical readers” involved in the specification of technical interfaces to ECMS may not be interested in the complete description of the ECMS application processes that are leading to the sending of a given message. They would probably search the necessary information to design and build the interface of the ECMS Actors’ business application with ECMS. Each reader can decide their own reading plan and it is not mandatory for every reader to read the entire UDFS book.

However, all readers, whether “business” or “technical”, may find it useful to read the following UDFS sections, which provide a background to the understanding of other UDFS sections:

- [ECMS parties, accounts and other reference data](#), which provides the basis for reference data organisation in the ECMS.
- [Access to the ECMS](#), which is a summary providing the basis for the understanding of the main ECMS concepts (Connectivity, Authentication and authorisation process, Security, etc.)

The following paragraphs show with a couple of examples how business readers and technical readers may follow different reading patterns, in order to fulfil their different needs.

Business Oriented perspectives

The business reader may be interested in the way information is structured in the ECMS. This user may want to follow the reading plan described below to find information about the operations that are needed in order to process an instruction in the ECMS and interact with the ECMS:

The business reader finds in section ECMS parties, accounts and other reference data a general description of the main reference data needed to work on the ECMS, specifying how they are used for the collateral management.

- From this point, the business reader may jump to section [Marketable Assets and Collateral](#) to find a description of the processing of a mobilisation and demobilisation of marketable assets including the details of the checks to be performed.
- For further details on the A2A communication flows, they may jump to [Counterparty Collateral Operations](#), where the inbound and outbound messages are described in an end-to-end process description.

Technical oriented perspectives

For a technical reader, it is more likely that the reading plans could pass through:

- Chapter 2 [DIALOGUE BETWEEN THE ECMS AND ECMS ACTORS](#), where a complete overview of the possible A2A dialogue with the ECMS is required, e.g. when structuring the interface of an ECMS Actor toward the ECMS. Each section of this chapter describes, then, the flows involving the functionalities of the UDFS. The readers can focus on the functionality they are interested in analysing the process and the main scenarios.
- Chapter 3 [CATALOGUE OF MESSAGES](#) where a detailed description of the content of a given XML message is provided, e.g. when specifying the details of the interface of an ECMS Actor towards the ECMS.

For further details on the checks to be performed and ISO codes used in the message, they may jump to Chapter 5 Appendices.

1 General Features of ECMS

The present chapter, after a short introduction of the ECMS (section [ECMS Overview](#)), describes all the features provided by the service.

Section [ECMS parties, accounts and other reference data](#) describes the reference data of the ECMS, including a description of all the relevant Parties and their relationships. It also describes the account structure, pool structure and other reference data.

Section [Access to the ECMS](#) introduces the details regarding the access to the ECMS, covering the different modes of connectivity, the authentication and authorisation processes, access rights, as well as security aspects and an introduction to the Graphical User Interface (GUI).

Section [ECMS features description](#) describes the various features of the ECMS and the underlying business processes, including Monetary Policy Operations (MPO), collateral, global credit and collateral position management, custody payment and support functionalities.

Section [Interactions with other services and infrastructures](#) describes the interactions that the ECMS, as a part of the Eurosystem Market Infrastructure, has with the other main services provided by the Eurosystem.

Section [Operational Day](#) describes the operation day, including the calendar and the scheduler.

Section [Limitations of the system](#) describes the limitations of the system.

Section [Exceptional Events](#) describes the functionalities envisaged to deal with some exceptional circumstances that may happen in the ECMS (e.g. the blocking of a Counterparty by its NCB).

1.1 ECMS Overview

The Eurosystem Collateral Management System (ECMS) is a harmonised and standardised pan-European service with common functionality across different countries and jurisdictions.

The key function of the ECMS is to manage collateral in Eurosystem credit operations and to support the handling of Monetary Policy Operations.

In order to reach these objectives, the ECMS relies on a secured communication with the Eurosystem Single Infrastructure Gateway (ESMIG) and provides authentication services and secure messaging to and from the centralised component. The ECMS scope has been defined in line with the legal framework included in the guideline on the Implementation of the Eurosystem Monetary Policy Framework (General Documentation), the CCBM Agreements (CCBM Main Agreement and CCBM Out Agreement) and the Governing Council decisions that specify the elements and principles of Eurosystem Monetary Policy.

The ECMS functional scope covers the general processing of marketable and non-marketable assets which are considered as eligible, and therefore accepted by the Eurosystem as collateral susceptible of being mobilised. The ECMS also supports the settlement of Monetary Policy Operations (MPOs) including liquidity providing reverse transactions and fixed term deposits. The ECMS also supports the settlement of collateralised monetary policy operations, as well as the handling of intraday credit and marginal lending. The collateral management in the ECMS applies the valuation methods and risk control measures defined by the Eurosystem.

The collateral pooling system is supported in the ECMS. The core of the ECMS Pool is the credit & collateral position which is fed on one hand via the Eurosystem Credit Operations and on the other hand via posted collateral.

The ECMS design permits a multi-pooling service per Counterparty, i.e. the handling of different dedicated pools of collateral for different purposes or specific types of operations.

Regardless of the fact that some collateral such as Emergency Liquidity Assistance (ELA) are held and managed externally, the ECMS provides a mechanism for recording the total amount of credit and collateral provided for each Counterparty.

As a general rule, the ECMS transactions follow a straight-through processing (STP) approach. Nevertheless, the ECMS Service Desk and National Central Bank users are allowed to perform manual interventions on predefined cases, as detailed in this document.

The ECMS makes use of the following Eurosystem Common Components :

- The Eurosystem Single Market Infrastructure Gateway (ESMIG) which allows duly authorised ECMS Actors (or ECMS Actors enjoying relevant privileges) to gain access to all Eurosystem Common Components and applications, including the ECMS. The ESMIG, moreover, guarantees sanitisation of messages for security purposes and technical validation of the standard messages sent to the different services. The interfaces elements ensure the communication between the ECMS and its actors

(supported by the ESMIG) (see section [Eurosystem Single Market Infrastructure Gateway \(ESMIG\)](#)).

- The Common Reference Data Management (CRDM) service, i.e. the centralised, harmonised reference data management component that handles in a single point most of the data that is shared by more than one Eurosystem service (see section [Common Reference Data Management \(CRDM\)](#)).

The ECMS also interacts with other systems such as TARGET2-Securities (T2S), Central Liquidity Management (CLM),

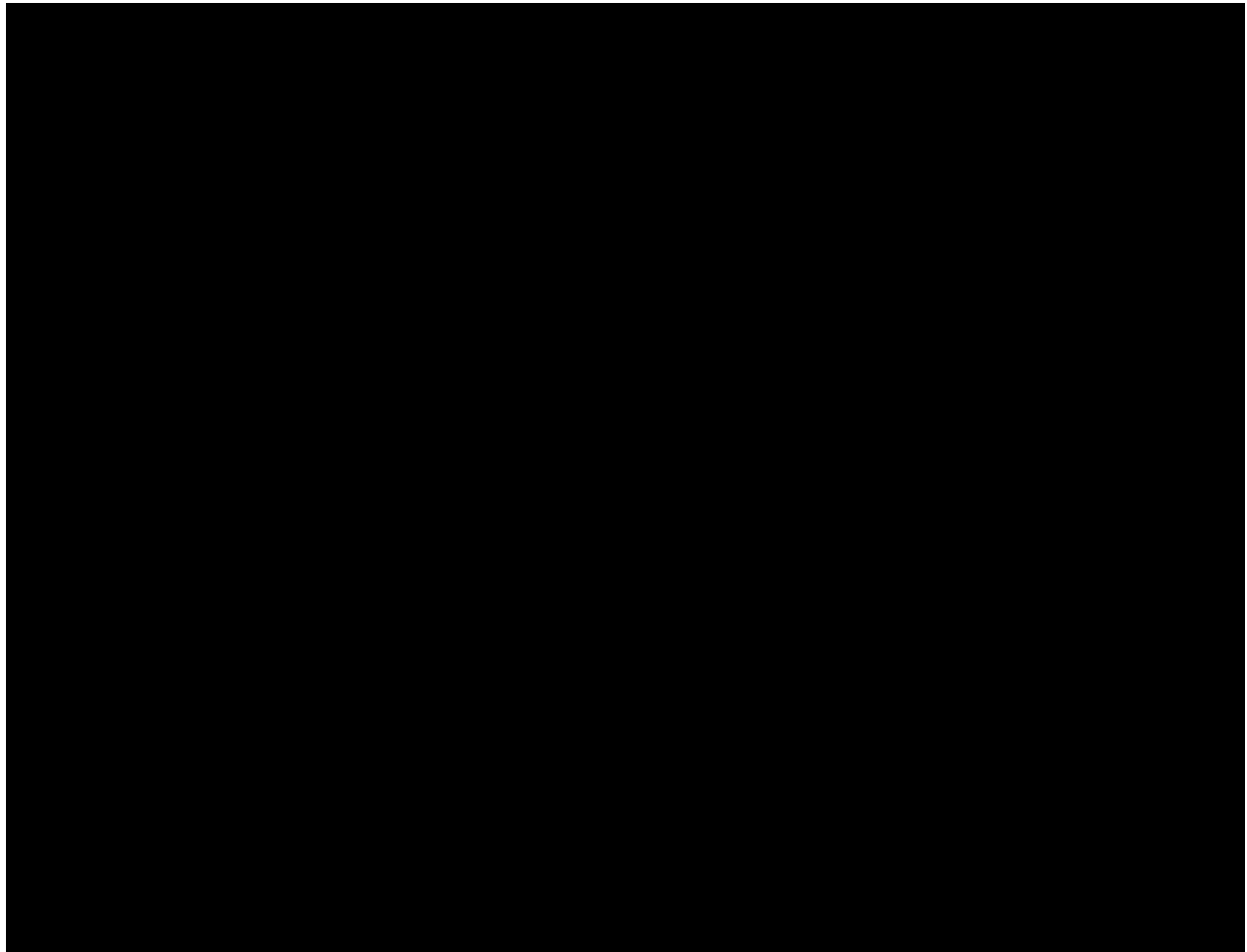
the Billing Common Component and the Archiving.

The ECMS Actors can access the ECMS through two different channels:

- Application-to-Application (A2A) channel, that is application oriented and allows external systems to interact with the ECMS;
- User-to-Application (U2A) channel that is user oriented and offers user-friendly application access through a Graphical User Interface (GUI).

Figure 1 presents the high-level functional elements of the ECMS and the actors, services and infrastructures that interact with the ECM

ECB



1.1.1 ECMS Interfaces

The ECMS Interface handles all incoming and outgoing communications with ESMIG and other services and infrastructures. It manages the use of the appropriate communication and undertakes the relevant technical entry checks. ECMS Actors have to comply with the formats and specifications defined for the ECMS.

In particular, the ECMS Interface is responsible for receiving instructions from different ECMS actors and transferring that instructions to the relevant functional modules (inbound communication).

In addition, the ECMS interface receives information from the relevant ECMS functional modules and structures the data, creates the message, determines the recipients and the associated communication means.

The system can be accessed through:

- User-to-Application mode (U2A): allowing activities performed manually by users via a Graphical User Interface.

-
- Application-to-Application (A2A): allowing direct communication between software applications via XML messages.

All the messages reach the ECMS through the Interface which receives the messages from different services such as ESMIG, EXDI (ESCB XML Data Integration), ESCB applications (e.g. C2D and RIAD), CLM and T2S. ESMIG is a common market infrastructure component that is used not only by the ECMS but also by other services. It works as a single access service, accessible through multiple networks and provide common protocols for its users. The Interface domain is composed by the following modules:

- A2A inbound processing.
- A2A outbound processing.
- U2A inbound processing.
- U2A outbound processing.

Section [CATALOGUE OF MESSAGES](#) provides all the messages that the ECMS is going to exchange.

ESCB