



# FAIRICUBE – F.A.I.R. INFORMATION CUBES

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Milestone M11: Processing knowledge base services  
released

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## Disclaimer

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# 1 Introduction

This document provides an overview of the operational status of the Knowledge Base Services. These services aim to share lessons learned from project use cases on how to extract real value and insights from large and complex data collections, with a focus on the generation of data-driven machine learning (ML) models.

Sharing the experience of project use cases is indeed key to achieving FAIRiCUBE's core goal of bringing the power of data cubes and machine learning to actors beyond the classic EO domains. Through the Knowledge Base Services, users have easy access to guidance, recommendations, technical and implementation expertise on data analysis and processing by means of two complementary and interlinked platforms: the [Read the docs](#) application deployed under the Community Collaboration Platform and the [Knowledge Base Platform](#).

The Read the Docs service provides simplified access to the documentation of the FAIRiCUBE Hub and the resources of the use cases: Getting Started, Examples, Self-Training Library on Machine Learning and Data Cubes. The exchange of information between experts/users also takes place through the FAIRiCUBE dedicated GitHub repositories.

The Knowledge Base Platform provides simplified access to analysis & processing resources. Its core is the [Query Tool](#), which enables interactive searches over the project's analysis and processing resources, based on different levels of technical expertise. This tool can be used to discover and analyse the processing resources of the use cases and their assets (datasets, pre-trained models, code libraries ...) through the accurate descriptions contained in the related metadata. The searches can be performed using keywords and pre-defined queries, or by creating a custom query (recommended for advanced users only). In addition, a [Tips & Tricks](#) section documents use cases challenges, with related successes, failures, solutions & workarounds.

The content shared through the Knowledge Base is largely based on existing documentation in the project's GitHub repositories and on information in the analysis/processing (a/p) metadata, but it also includes input from selected external web resources.

While it was originally intended that both platforms would share the documentation from the use cases, it was later agreed that it would be better to have all the training documentation on the same platform (i.e., the Read the Docs documentation deployment) to further improve the user experience. In particular, the content of the KB Self-Training section has been revised (to avoid overlap) and moved to the Community Collaboration platform.

The content of the Read the Docs application is managed via the [collaboration-platform](#) GitHub repository according to the [related instructions](#), while the [common-code](#) repository is used as main source to add tips and tricks to the corresponding section in the Knowledge Base Platform.

Documentation of analysis & processing resources is produced by creating relevant metadata in the GitHub [resource metadata](#) repository using a dedicated metadata entry [web form](#).

The Knowledge Base Services are currently in a prototype stage. Work continues to improve the user experience and enhance the content.

## 2 Deliverables contributing to M11

There are three formal deliverables contributing to Milestone 11, namely the deliverables D3.4, D4.3 and D4.5, as listed in Table 1.

Description	Lead Beneficiary	Type	Dissemination level	Due date
D3.4 Processing Knowledge Base Services	EPS	DATA	Public	24.02.2024
D4.3 Public Listing (Catalogue) of FAIRiCUBE processing/analysis resources	EPS	R	Public	31.12.2023
D4.5 FAIRiCUBE Apps supporting community collaboration	EOX	DEM	Public	31.12.2023

Table 1: Formal deliverables contributing to M11.

Deliverable D3.4 "Processing Knowledge Base Services" introduces the Knowledge Base Services, aimed to share know-how to extract real value and insights from large and complex data collections. The focus is on data-driven machine learning (ML) model generation, based on the experience and understanding of the project's use cases.

Deliverable D4.3 "Public Listing (Catalogue) of FAIRiCUBE processing/analysis resources" outlines the metadata requirements necessary for the identification and efficient use of the project's analysis and processing resources, details how these metadata files can be created, published in the FAIRiCUBE Catalogue and queried using the Knowledge Base Query Tool.

Deliverable D4.5 "Apps supporting community collaboration" outlines the process of gathering and streamlining the use cases requirements and provides a brief introduction to the first set of applications provided.



### 3 Summary

The development of Knowledge Base Services is essential for the efficient exchange of experiences from project use cases and for the achievement of FAIRiCUBE's main goal, which is to bring the power of data cubes and machine learning to actors outside the traditional EO domains.

The Knowledge Base Services have been released in the form of two complementary and interlinked platforms: the Knowledge Base and the Read the Docs application deployed under the community collaboration platform. They are in a prototype state. Work is ongoing to finetune services integration and governance, to refine user interfaces based on feedback from a more systematic use by stakeholders, to enhance existing content.

The availability of an interactive tool for querying the processing resources of the use cases, coupled with online documentation that provides context and insight into the data analysis and processing procedures and tools, ensures that users can extract value from the Knowledge Base Services with ease and efficiency.