

Smart4Food HUB

Technical Description

WP2 - Magnetar



innovative microlearning for farmers



smart4food

www.smartforfood.eu



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01 Introduction

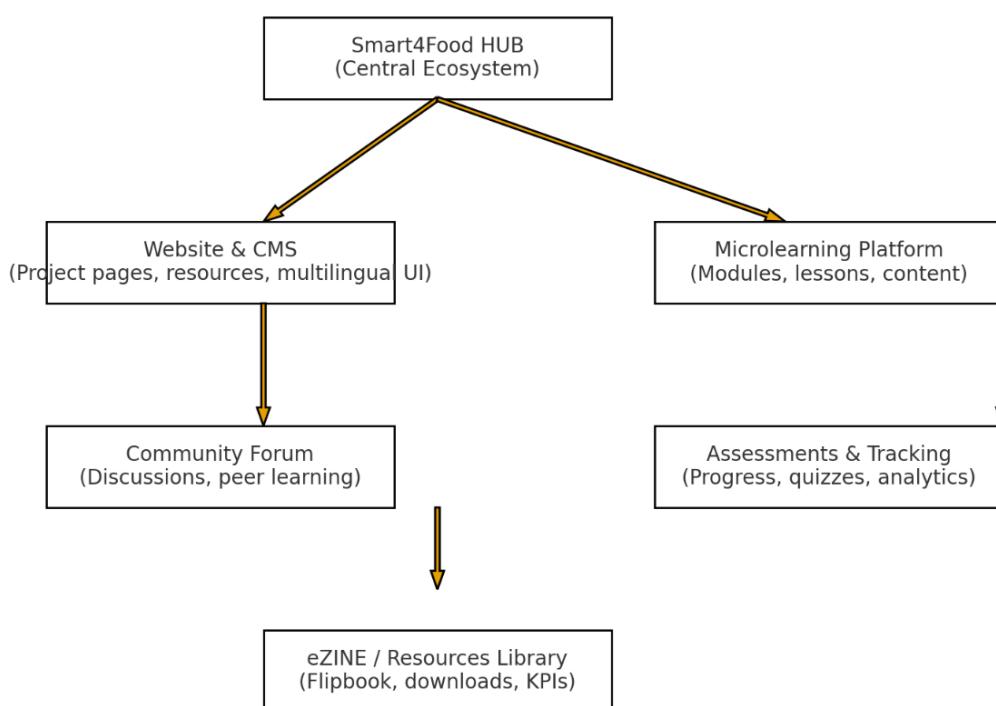
The Smart4Food HUB is the central digital infrastructure of the Smart4Food project, designed and developed under the leadership of Magnetar Ltd. Its purpose is to provide a unified, multilingual, interactive ecosystem that hosts all educational materials, microlearning modules, community engagement tools, and project dissemination assets. The HUB brings together small-scale producers, rural stakeholders, VET providers, educators, students, and policy actors in a single, accessible environment that supports knowledge exchange, capacity-building, and continuous learning.

Through an integrated platform architecture, the Smart4Food HUB enables seamless delivery of microlearning content, interactive assessments, digital resources, eZines, and community features such as forums and user support tools. It is built for long-term sustainability, scalability, and multilingual accessibility, in alignment with the objectives and KPIs defined in WP2 and the overall project.

02 Technical Architecture

The Smart4Food HUB is built on a modular and extensible infrastructure that integrates the project website, the educational platform, and the community features into one cohesive digital environment. The architecture follows five core pillars:

- 2.1 Website & Content Management System
- 2.2 Advanced Multilingual Framework
- 2.3 Microlearning Platform Integration
- 2.4 User Assessments & Progress Tracking
- 2.5 Community Forum and Engagement Tools



02 Technical Architecture

2.1 Website & Content Management System

- Based on a robust CMS ensuring flexible page creation, high-speed performance, SEO optimisation, and accessible navigation.
- Integrates all project results (eZines, deliverables, reports, multimedia) in structured, user-friendly formats.
- Built to comply with GDPR, WCAG accessibility principles, and European data governance standards.

2.2 Advanced Multilingual Framework

To ensure full inclusiveness and accessibility across partner countries:

(a) Automatic Translation

- The HUB uses an advanced auto-translation engine capable of translating:
 - Website pages
 - Platform modules
 - User interface elements
 - Plugins, add-ons, forum components, and learning tools

- The system updates translations automatically when new content is added.

(b) Manual Translation for Visual and Downloadable Content

Partners only need to manually translate:

- Images containing text
- Videos (subtitles or voiceover)
- Deliverables (PDFs, guides, eZines)
- Microlearning infographics or static assets

The HUB displays translated files per language with dedicated download buttons.

2.3 Microlearning Platform Integration

The HUB integrates a complete microlearning environment that supports:

- Modular lessons
- Short video-based learning content
- Infographics and step-by-step guides
- Real-life case studies
- Interactive exercises

Embedded multimedia is supported through:

- YouTube channel integration
- Secure embedding of videos, images, animations
- Optional hosting of raw files, with scalable server capacity
- Dedicated templates for mobile-friendly microlearning

2.4 User Assessments & Progress Tracking

The system includes an advanced testing and assessment suite with:

- Quizzes
- Self-assessments
- Module-based tests
- Learning progress tracking
- User dashboard
- Completion indicators

These functions support the project's goals for measurable knowledge acquisition and competency development among target users.

2.5 Community Forum and Engagement Tools

A lightweight but fully functional forum module is available within the HUB, enabling:

- Topic-based discussions
- Knowledge exchange between producers, trainers, and learners
- Moderation tools
- Optional removal of message timestamps to avoid the appearance of inactivity

This space enhances peer connection, strengthens community bonds, and supports the Smart4Food ecosystem beyond the formal training modules.

03 Core Functional Components

3.1 eZINE Reader

- Flipbook-based interactive reader supporting immersive reading.
- Multilingual hosting capability with separate download buttons per language.
- KPI analytics including:
 - Total views
 - Page-level visits
 - Downloads per language
- Fully integrated into the HUB's navigation structure.

3.2 Resource Library

A central repository hosting:

- eZine issues
- Project deliverables
- Methodological guides
- Visual assets
- Translated materials
- Case studies and examples

All resources are available in partner languages, with structured categorization for quick access.

3.3 User Management & Access Permissions

The HUB enables:

- Tiered access levels (public, registered, admin)
- Controlled release of materials (draft vs. final outputs)
- Easy onboarding of new user groups
- GDPR-compliant user data processing and consent management

3.4 Analytics & Monitoring

The system includes monitoring capabilities aligned with WP2 KPIs:

- User visits, active users
- Module completion rates
- Assessment outputs
- Downloads and page views
- Participation in forums and interactions

These analytics support reporting to the European Commission and the internal evaluation work package.

04 Multimedia Management Strategy

To optimise performance and sustainability:

4.1 Video Hosting

- A dedicated Smart4Food YouTube channel is recommended.
- Ensures reliable hosting, high-speed playback, and reduced load on the HUB server.
- Videos can be embedded seamlessly in microlearning modules or resource pages.

4.2 Image and Infographic Integration

- High-resolution imagery is supported through optimised formats.
- Images can be captioned, tagged, and categorised for inclusion in learning modules.

4.3 Large-File Hosting

If partners choose to upload raw video or multimedia files directly to the HUB:

- Hosting capacity will be expanded accordingly.
- A storage management system will be implemented to ensure performance.

05 Security, Privacy, and Accessibility

The HUB integrates:

- SSL encryption
- GDPR compliance
- Secure data storage
- Regular backup cycles
- WCAG 2.1-compliant design (contrast, alt text, screen reader compatibility)
- Accessibility options across all languages
- .

06 Multimedia Management Strategy

Magnetar ensures the HUB is designed for post-project sustainability, including:

- Modular structure that allows new content uploads beyond the project lifetime
- Platform scalability for hosting future eZines, training modules, and new languages
- Documentation for partners to maintain and update the system
- Options for integrating future EU-funded activities into the HUB ecosystem

07 MAGNETAR's Leadership Role

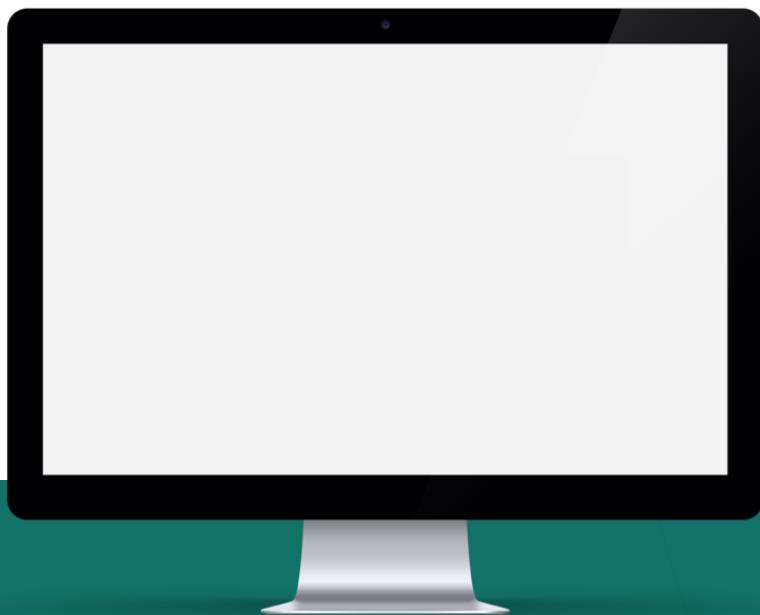
As the lead developer and technical owner of the Smart4Food HUB, Magnetar is responsible for:

- Designing the end-to-end digital architecture
- Ensuring functional integration of the website, HUB, and learning platform
- Managing multilingual systems and translation workflows
- Embedding assessment, analytics, and microlearning features
- Maintaining security, hosting, and system updates
- Coordinating HUB-related tasks across WP2 and other work packages
- Delivering a unified user experience aligned with Smart4Food objectives

Magnetar provides both technical expertise and strategic oversight, ensuring that the HUB becomes a long-lasting digital ecosystem that supports education, upskilling, rural innovation, and sustainable food systems.



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