The Food Safety Market: An SME-powered industrial data platform to boost the competitiveness of European food certification

D6.1 - Piloting Scenarios & Evaluation Plan II

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ACRONYMS LIST

DMHP	Data Management Handling Plan
EU	European Union
FAIR	Findable, Accessible, Interoperate and Reusable
SUS	System Usability Scale
TheFSM	The Food Safety Market

EXECUTIVE SUMMARY

This document provides an overall guidance methodology for the pilot execution in the first iteration of TheFSM pilots. It sets out the whole process of developing and conducting a pilot and provides for each step a guidance on how to execute these activities.

A pilot consists of the following different steps: i) creation of a pilot plan, including a Data Management Handling Plan (DMHP), ii) preparation of the pilot, iii) deployment and testing of the pilot, iv) evaluation of the pilot results, v) making adaptations to the product tested in the pilot, vi) piloting the new revised product and vii) finalisation of the product.

For all TheFSM applications (i.e., FOODAKAI 2.0, Agrivi 2.0, and FOODINSPECTOR), each of these steps is described in detail including materials that are needed and made specific for the applications to be tested in the pilots. In addition, for each pilot and application a local DMHP is developed. An outline for such a DMHP is provided and it describes how relevant data during the pilot should be collected, processed or generated, how it should be curated and preserved, etc. Finally, some supplementary materials are provided in the appendix.

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1 INTRODUCTION

In The Food Safety Market" (TheFSM) project an extensive piloting is foreseen to test the applications and services developed by the project partners that will be supported and channelled through the infrastructure of the TheFSM. The first iteration of the pilots will take place in Q4 2021, in ten countries (i.e., Greece, Netherlands, Italy, Romania, Croatia, Hungary, Poland, Cyprus, Egypt, Jordan) (Figure 1) and to ensure optimal pilot execution and product development, an updated pilot methodology for the pilots leaders and the participants is essential.

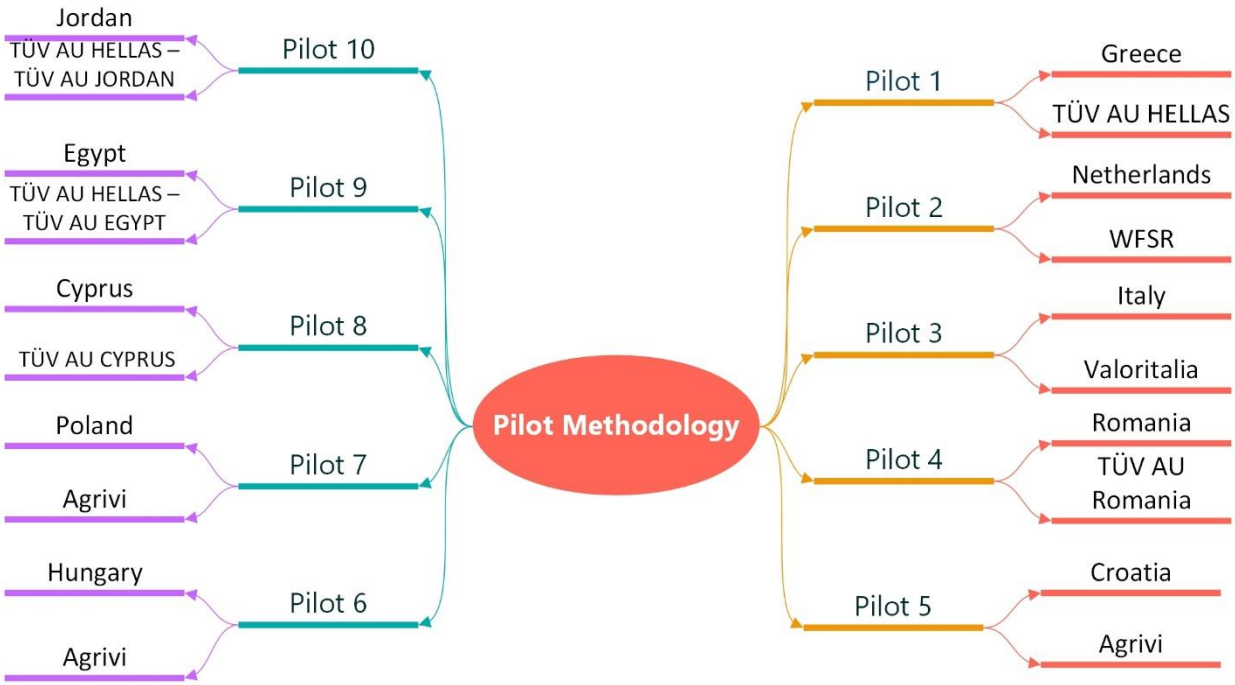

Figure 1: Pilots per country and pilots leaders.

Within WP6, such guidance documents is prepared entailing a methodology that consists of the following different steps: i) creation of a pilot plan, including a Data Management Handling Plan (DMHP), ii) preparation of the pilot, iii) deployment and testing of the pilot, iv) evaluation of the pilot results, v) making adaptations to the product tested in the pilot.

For all TheFSM applications (i.e., FOODAKAI 2.0, Agrivi 2.0, and FOODINSPECTOR), each of these steps is described in detail including materials that are needed and made specific for the applications to be tested in the pilots. A local Data Management Handling Plan (DMHP) is also updated for each pilot that outlines how relevant data during the pilot should be collected, processed or generated, how it should be curated and preserved, etc.

In this report, the pilot methodology is revised, in order to ensure that it is up-to-date and covering the needs and particularities of each pilot.

2 OVERVIEW OF DESIGNING A PILOT PROJECT

A pilot consists of the following different activities: i) creation of a pilot plan, including a Data Management Handling Plan (DMHP), ii) preparation of the pilot, iii) deployment and testing of the pilot, iv) evaluation of the pilot results, v) making adaptations to the product tested in the pilot, and vi) piloting the new revised product. These steps are shown in the flow diagram in Figure 2. Each step will be explained in detail in the sections below for each application (i.e., FOODAKAI 2.0, Agrivi2.0, and FOODINSPECTOR).

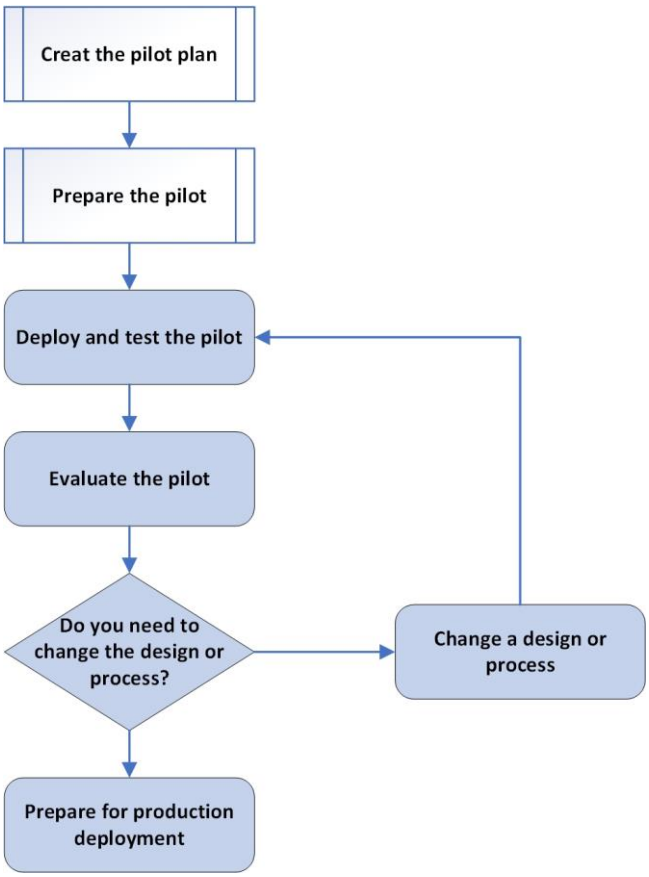

Figure 2: The various steps in a pilot.

3 FOODAKAI

3.1 Pilot Plan

The pilot plan defines the scope and objectives of the pilot, identifies pilot participants, where the pilot will be conducted and the duration. It includes a schedule for deploying and conducting the pilot and plans for training and communicating with pilot participants, evaluating the pilot, identifying risks and contingencies, and other key activities that occur during a pilot deployment. The expected contributions and responsibilities of the pilot participants, including confidentiality and ownership should be made clear in a simple legal agreement.

For the first iteration of the pilots, all FOODAKAI 2.0 pilot plans will be based on this section describing all elements needed to be considered, but not necessarily all features need to be included in each pilot. This will depend on the needs and requirements of each specific pilot.

3.1.1 Pilot Scope and Objectives

The first step in planning a pilot is to define the objectives and the scope of the pilot.

Pilot Objectives

The goals of TheFSM pilots related to FOODAKAI 2.0 in the first iteration of the pilots are:

- Ensure that FOODAKAI 2.0 meets the business and functional requirements, prioritized for the first iteration.
- Ensure that the system works properly in a controlled environment.
- Develop and test end-user training materials.
- Train the support and help desk teams.
- Collect users feedback, proposed adjustments or new functionality, leading to updated requirements.
- Market TheFSM system to potential users.

Pilot Scope

The scope of the pilots will depend on the business and functional requirements that FOODAKAI 2.0 has to meet, and a clear description by FOODAKAI 2.0 which services and features will be included and which will not. Other elements to consider are the following:

1. For the first pilot iteration, taking into account that the system will not be ready for full deployment the pilots will proceed with evaluation in a controlled setting and specific duration.
2. For those users that are interested for a longer term use and evaluation of the system, support will be provided by the team.
3. Internationalization will be available in the second iteration of the pilots. For the first iteration the tools will be offered in the English language. This issue should be taken into account while recruiting users for the pilot.
4. Evaluation will proceed through scenarios leading the users through specific workflows of tasks that will allow them to experience the variety of functionality of the system. In this way the most stable features will be tested in context.
5. Less advanced features and functionality can be demonstrated to the users for feedback, if hands-on testing is not possible.

3.1.2 Pilot Group and Pilot Sites

For FOODAKAI 2.0 pilots, the pilot participants were selected after having several meetings with partners that indicated an interest in the TheFSM technology. The number of pilot sites and the pilot users group were defined based on: i) the objectives of the pilot, ii) the countries where we have partners and support staff, iii) specific technology requirements that can be piloted only by using particular user groups. Several potential participants were selected in the focus groups organized in WP1 of TheFSM project using the same selection criteria defined to select the participants in the focus groups (see deliverable D1.1.). The table below shows the specific information related to FOODAKAI 2.0 with regards to the pilot group.

Table 1: Pilot Groups and Pilot Sites FOODAKAI 2.0.

Pilot	Country	TheFSM Resp	Group
P1	Greece	TÜV AU HELLAS	Actors in the food supply chain
P2	Netherlands	WFSR	Actors in the food supply chain
P3	Italy	Valoritalia	Wine producers (all chain)
P4	Romania	TÜV AU Romania	Food processors
P8	Cyprus	TÜV AU CYPRUS	Actors in the food supply chain
P9	Egypt	TÜV AU HELLAS – TÜV AU EGYPT	Actors in the food supply chain
P10	Jordan	TÜV AU HELLAS – TÜV AU JORDAN	All actors in food supply chain

3.1.3 Pilot Plan Documents

The pilot plan of the FOODAKAI 2.0 includes the following documents: a training plan, a support plan, a communication plan, an evaluation plan, a risk and contingency plan, a backup and recovery plan, and a schedule.

Pilot Training Plan

A training plan describes what the pilot participants need to know before they begin the pilot and describes how you plan to train them.

FOODAKAI 2.0 will be available for pilot use with in-built help in the form of a digital user manual,

describing step by step its basic operations. However, to ensure the smooth initialization and operation of the pilots, live training will be available in the form of webinars. For the first iteration of the pilots, the training material and the training will be given in English.

Three 60' online training webinars will be organized at pre-arranged dates and times so that all pilot users have the chance to participate. During the training, Agroknow representatives will walk the users through all the FOODAKAI 2.0 features and functionalities. A recording of this training will be made available to the users to keep it for future reference if needed, as well as to be used by those users unable to be present in any of the offered webinar sessions.

Pilot Support Plan

The support plan identifies who will provide support for pilot participants, the level of support required, and how users can report problems.

Defining Support Team Roles

For each FOODAKAI 2.0 pilot, we identified the support teams and their roles (see Table 2).

Table 2: Support Teams FOODAKAI 2.0.

Pilot	Country	TheFSM Resp	Support team	Support team role
P1	Greece	TÜV AU HELLAS	Mavropoulos Konstantinos, Stelios Vaporidis, Ellie Vaggeli	Head of pilots, Pilots coordinator, Pilots project management
P2	Netherlands	WFSR	Yamine Bouzembrak, Hans Marvin	Pilots leaders in the Netherlands
P3	Italy	Valoritalia	Francesca Romero, Cristina Micheloni, Andrea Zaffonato, Anna Polloni, Sonia Gastaldi	Use Case Leader, Technical manager, Technical Manager, Technical Manager, Technical Manager

P4	Romania	TÜV AU Romania	George Gheorghiu, Iuliana Demeter, Aurelia Grecu	Head of pilots, Pilots coordinators
P8	Cyprus	TÜV AU CYPRUS	Sousanna Charalambidou	Pilots coordinator
P9	Egypt	TÜV AU HELLAS – TÜV AU EGYPT	Mavropoulos Konstantinos, Stelios Vaporidis, Ellie Vaggeli	Head of pilots, Pilots coordinator, Pilots project management
P10	Jordan	TÜV AU HELLAS – TÜV AU JORDAN	Mavropoulos Konstantinos, Stelios Vaporidis, Ellie Vaggeli	Head of pilots, Pilots coordinator, Pilots project management

**Emails and phone numbers are not shown in this table for GDPR reasons.*

Problem Tracking and Resolution

When problems arise during the FOODAKAI 2.0 pilots, participants have a way to report them to the team.

Response time for technical issues

Issue reports cover problems in the operation of the FOODAKAI modules and data that are provided in the context of the pilot operation. The end user is informed about the status of the submitted issue through email messages. Live chat with a human solution specialist, responding for all the business days and working hours in European time zones (8:00 - 18:00 CET), North America time zones (8:00 - 16:00 CDT), Australian time zones (14:00 - 21:00 AEST), Asia time zones (12:00 - 21:00 JST) and African time zones (9:00 - 18:00 WAT). The messages that are submitted to the chat outside these time zones are replied through email within 12 hours. All requests are being addressed within 24h (during business days). The response time for issues submitted during weekends or holidays starts counting on the next business day (8:00 CET).

Resolution time for technical issues

Any requested issue received will be stored by the FOODAKAI internal ticketing system. In terms of software and data issues, the request is processed and classified into one of the predefined ticket categories (e.g., system issue, data accuracy issue improvement request, new functionality request). For such kinds of requests, the resolution time is 1 business day. In terms of other types of issues, our team is acknowledging them within 24h and works on their appropriate reply and resolution within 3 business days. In terms of software and data issues, the resolution time is within 1 business day.

For the needs of support and reporting, an account manager from Agroknow will be assigned to support each pilot and their support team. This person will serve as their point of reference and will support, train and guide each pilot user so that they get maximum value from FOODAKAI 2.0 and will ensure the smooth operation of the pilot. The work of the account manager will be directly supervised by Agroknow's Head of Customer Success.

FOODAKAI Escalation Matrix

The Escalation matrix for FOODAKAI service is presented in the following table. Any issue and feedback can be submitted to the customer support team using the support email and/or the live chat tool. Customer success manager tracks the issue and escalates it to the appropriate level, in order to be handled.

Table 3: The Escalation matrix for the FOODAKAI service.

Escalation level	Responsable	Channel*	Phone*	How/When to Escalate
1	Customer Support Team	-	-	Difficulty in using the platform, product or data issues

2	Customer success manager	-	-	Training & onboarding issues, reporting issues, contact points, feedback from end-users
3	Head of customer success	-	-	New service request, feedback from the management, product value issues.
4	Head of FOODAKAI product	-	-	Serious issue of the technology or data/ New features request

**Emails and phone numbers are not shown in this table for GDPR reasons.*

Communication Plan

The communication plan is used to identify the type of information that will be communicated, to whom it will be communicated, by what means, and how often.

Pilot leaders, with the support of the rest of the consortium partners when needed, identify viable participants for the pilots. After the initial communication and the expression of interest for participation, a series of meetings, face to face or remote, will be scheduled as needed with the objective to:

1. Provide to the possible participants more information on the nature of the pilot and what would be needed on their part in terms of time, effort etc.
2. Describe the type of testing they are to perform.
3. Obtain their commitment to the pilot.
4. Provide them with a timeline for the pilot.
5. Clarify their responsibilities.
6. Describe the type of testing they are to perform.
7. Obtain their consent to participate in the pilot and their informed consent, in accordance with Article 6(1)(a), GDPR for the processing of personal data.

Slides that contain all the information mentioned above will be prepared. The first point of communication for each pilot, are the pilot leaders with the support of relevant responsible persons per issue that may arise with FOODAKAI 2.0 (Table 4).

Table 4: Communication Plan FOODAKAI 2.0.

Activity	Participants	Channel	When	Responsible
Meetings with the pilots participants	Pilots leaders and pilots participants	Online meetings and emails	Q3, Q4, 2021	Pilots leaders
Provide to pilots participants information on the pilots (Slides, documents, etc)	Pilots participants	Emails	Q3, Q4, 2021	Pilots leaders
Organize the pilot session	Pilots participants	Online Teleconferencing system	Q4, 2021	Pilots leaders
Organize training webinars	Pilots leaders and pilots participants	Teleconferencing system	Q4, 2021	Giannis Stoitsis, Timos Lanitis
Record and provide the training material	Pilots leaders and pilots participants	Youtube, web-based resources	Q4, 2021	Giannis Stoitsis, Vivi Katifori
Collect evaluation feedback	Pilots participants	Online questionnaire	Q4, 2021	Pilots leaders
Technical issues and support	TBD	Issue tracking sustem, Live chat, online questionnaire	Q4, 2021	Giannis Stoitsis, Timos Lanitis

Regular and comprehensive communication with pilot participants helps to ensure that participants are committed to the success of the pilot project. Mechanisms for communicating information about the pilots will be used such as TheFSM website, frequently asked questions pages, and status reports.

Evaluation Plan

The evaluation plan describes the way the feedback from the pilot participants will be collected and assessed. The evaluation plan contains information on the sources of feedback and how to

collect this feedback. It then continues with a section on how to analyze the results and concludes with a discussion on how to decide to continue with the pilot. The details of this section will be covered in sections (3.3.4 and 3.3.5)

Risk and Contingency Plan

The risk and contingency plan describe the risk factors that could prevent the pilot from being deployed successfully. In the case of FOODAKA 2.0 pilots, as it is a solution based on software systems, no specialized hardware is needed for the successful deployment of the pilots and the currently identified risks are mostly software related. These include the ones presented in the following table (Table 5).

Table 5: FOODAKAI 2.0 Risk and Contingency Plan.

Risk	Mitigation
Requirements' analysis led to several high priority user stories. Maybe it will not be possible to cover all of them within the 6 months development time until the pilot start.	With an early start on development and allocation of additional resources the time plan can be kept. The prioritization of the user requirements is also helpful to guide the priorities in development.
Requirements' analysis showed that existing workflows include documents in difficult formats and it will be challenging to achieve automated processing.	In this case maybe it will be needed to make them available at their current format.
It was initially thought that GLN (GS1) number would be available for all companies, but it is not.	A possibility examined is to use VAT number instead.
It is a risk to ensure the critical mass of users for the pilots, enough to get useful feedback.	This has been mitigated with continuous and rigorous recruitment of users by the whole consortium.

Backup and Recovery Plan

The backup and recovery plan establishes guidelines and procedures to prevent problems that might cause data loss or interruptions to your organization's operations, and to allow recovery as quickly as possible if such events do occur.

FOODAKAI 2.0 utilizes technologies and cloud platforms that apply security best practices and manages security so that the pilot users can focus on the risk assessment and prediction. The platform is designed to protect customers from threats by applying security controls at every layer from physical to application, isolating application layer and data layer, and with its ability to rapidly deploy security updates without interaction or service interruption.

FOODAKAI's physical infrastructure is hosted and managed within Amazon's and Hetzners' secure data centers. Both data center providers continually manage risk and undergo recurring assessments to ensure compliance with industry standards. The data centers operations have been accredited under:

- ISO 27001
- SOC 1 and SOC 2/SSAE 16/ISAE 3402 (Previously SAS 70 Type II)
- PCI Level 1
- FISMA Moderate
- Sarbanes-Oxley (SOX)

In addition, there is a disaster recovery plan in place and regular testing of that plan will be conducted at least twice a year. The recovery time is less than 12 hours. More specifically, the platform automatically restores the FOODAKAI applications and databases in the case of an outage. We are using a platform as a service that is designed to dynamically deploy applications within the cloud, monitor for failures, and recover failed platform components including customer applications and databases.

The platform as a service that we use to deploy the FOODAKAI platform is designed for stability, scaling, and inherently mitigates common issues that lead to outages while maintaining recovery

capabilities. It maintains redundancy to prevent single points of failure, can replace failed components, and utilizes multiple data centers designed for resiliency. In the case of an outage, the platform is deployed across multiple data centers using current system images and data is restored from backups. It reviews platform issues to understand the root cause, impact to customers, and improve the platform and processes.

Pilot Schedule

The first iteration of the pilots will be in the end of 2021 Q4, as shown in Table 6. Each pilot leader will define the exact date with the partners involved in his pilot.

Table 6: Pilot Schedule FOODAKAI 2.0.

Pilot country	TheFSM Resp	Estimated period for the first pilot iteration	Estimated period for the second pilot iteration	Estimated period for the third pilot iteration
Greece	TÜV AU HELLAS	Q4, 2021	Q2, 2022	Q4, 2022
Netherlands	WFSR	Q4, 2021	Q2, 2022	Q4, 2022
Italy	Valoritalia	Q4, 2021	Q2, 2022	Q4, 2022
Romania	TÜV AU Romania	Q4, 2021	Q2, 2022	Q4, 2022
Cyprus	TÜV AU CYPRUS	Q4, 2021	Q2, 2022	Q4, 2022
Egypt	TÜV AU HELLAS – TÜV AU EGYPT	Q4, 2021	Q2, 2022	Q4, 2022
Jordan	TÜV AU HELLAS – TÜV AU JORDAN	Q4, 2021	Q2, 2022	Q4, 2022

3.2 Prepare for the Pilot

After the creation of a pilot plan, the second step in a pilot is its preparation.

3.2.1 Prepare Pilot Sites

The FOODAKAI 2.0 application will be tested one month before the pilot is scheduled to begin.

3.2.2 Prepare Pilot Participants

The pilots leaders will define the pilot start date with their partners. As the start date for the pilot approaches (i.e. 2 weeks), the pilot participants will receive a presentation that contain the following information:

- Scheduled date for the start of the pilot and the deployment plans.
- The type of training the participants will receive and the scheduled date.
- Procedures the participants need to follow on their computers to be able run the pilot.
- Contact names and numbers for support
- The (personal) log-in codes, if necessary.

3.2.3 Test the Rollout Process

Time is scheduled during the testing phase for the pilot team to develop, document and test the rollout process.

3.3 Deploy and Test the Pilot

The third step in developing a pilot is its deployment and testing.

3.3.1 Conduct a Trial Run of the Pilot

The deployment of the FOODAKAI 2.0 application will be tested with the pilot team first. Performing this trial run of the pilot ensures that any problems with the deployment will be identified before the application has to go live. Possible pilot scenarios as well as the evaluation

workflow will be also fully tested at this stage. The problems identified during the trial run will be solved before the deployment of the pilot.

3.3.2 Deploy the Pilot

Having addressed any possible issue identified during the trial run, the pilot will be ready for deployment. Taking into account that the tool is web-based, no specific installations are needed for the pilot run, however user access should be ensured before deployment by verifying that user accounts are properly created and that the users have appropriate web browsers installed in the machines where they will work.

3.3.3 Resolve Issues during the Pilot

During the pilot, the participants perform their regular tasks and they will be able to report any problems they encounter when using the FOODAKAI 2.0 application. They will be able to do so using an incident-tracking system, implemented as an alerting module of the FOODAKAI 2.0 application. Problems that are reported by the pilots participants will be reviewed, prioritized, and fixed according to procedures outlined in the issue resolution plan. Since, multiple pilots will be scheduled in Q4 2021, the results of the first pilots will be evaluated and the problems found will be resolved before beginning the next pilots.

3.3.4 Monitor the Pilot

During the pilot, the pilot team of each pilot will continually monitor the pilot looking for bottlenecks and areas that need to be fine-tuned. The team will check problems reported and look for trends and for problems in the application FOODAKAI 2.0 performance. Since, the second iteration of the pilot is scheduled in Q2 2022, the results of the first pilots will be evaluated and the problems found will be resolved before beginning the next iteration.

Pilot Evaluation

During the pilot, participants will provide feedback about how well the design and features of the FOODAKAI 2.0 application are working. This feedback is crucial because based on this information the decision will be made to improve the application and conduct further piloting tests.

3.3.5 Obtain Feedback

Feedback Sources

The primary source of feedback will be the pilot participants (potential users of TheFSM applications), which in the case of FOODAKAI 2.0 is a group of individuals with a wide variety of occupations, computer skills and experiences. Because of the variety in the kind of user, it is important to collect the following information:

- Background information on the participants.
- System Usability Scale.
- The evaluation of FOODAKAI 2.0 application.

For this information the following questionnaires will be used.

- Background information on the participants.
- System Usability Scale.
- The evaluation of FOODAKAI 2.0 application.

Incident-tracking System

During the pilot, the participants will be able to report any problems they encounter when using the FOODAKAI 2.0 application using an incident-tracking system implemented as an alerting module of the FOODAKAI 2.0 application.

Metrics on Task Performance

The pilot participants will perform certain tasks with FOODAKAI 2.0. During these tasks their performance will be measured. The following metrics will be analyzed when participants are given a task:

- Number of errors

- Percentage of the task completed successfully
- Number of hints/prompts needed to complete the task
- Time to complete the task
- Major problems/obstacles associated with each task

The results from the questionnaires and the reported problems will be stored in Excel in the google drive of TheFSM project.

Analyse Feedback

The goal here is to transform the feedback into the metrics and standards used to assess the usability of FOODAKAI 2.0 and the objectives of the pilot. All feedback collected from the different sources: information on specific problems collected using Incident-tracking System, the online questionnaire of the evaluation of FOODAKAI 2.0 application, will be integrated in on table for analysis and improvements.

Report Findings

Directly after the pilot a first preliminary analysis will be conducted that gives insight into the larger trends and patterns. This analysis will take place in the days following the end of the pilot and results will be sent to the relevant people after at maximum 3 days. The goal here is to identify issues that have to be fixed and communicate these (and only these) findings to the development team so they can work on these issues immediately without having to wait for the final report.

3.3.6 The Next Step

After the feedback has been collected and analyzed, there will be sufficient information to evaluate whether the delivered application meets the design specifications, as well as the business requirements.

Depending on how well the pilot meets the success criteria, there are a number of strategies that can be employed at this point in the pilot deployment:

- Stagger the pilot forward. If the pilot was deemed partially successful, deploy the pilot to the next pilot group or, if your team has planned to conduct multiple pilots, proceed with the next pilot.
- Roll back the pilot. When the pilot is not completely successful, it is often necessary to roll it back so that issues can then be resolved.
- Patch the pilot and continue. If the pilot is not successful, but the issues raised are easily fixed, issue the same pilot group a "patch," a fix to existing code.

The pilot is not complete until the team ensures that the proposed solution is viable in the production environment and that every component of the solution is ready for deployment.

4 AGRIVI

4.1 Pilot Plan

In Q4 2021, we will conduct the first iteration of TheFSM. The pilots related to the pilots for AGRIVI 2.0 application will be implemented in all countries where we have partners (i.e. Greece, Netherlands, Italy, Romania, Austria, Croatia, Poland, Hungary, Cyprus, Egypt, Jordan). For each pilot a dedicated pilot plan and materials are needed and will be based on the specificity of the case and products being tested. Based on the results and needs, it could be that the same case and products are being tested in different countries. All AGRIVI 2.0. pilot plans will be based on this guidance document describing all elements needed to be considered, but not necessarily all features need to be included in each pilot. This will depend on the needs and requirements of each specific pilot.

4.1.1 Pilot Scope and Objectives

Pilot Objectives

The goals of AGRIVI 2.0 pilots in the first iteration of the pilots are:

- Ensure that the system works properly in the business environment.
  - Activate demo accounts with necessary access rights.
  - Ensure application performances are satisfactory.
- Ensure that the design meets the business requirements.
  - AGRIVI 2.0 user interface is easy to use.
- Ensure that the AGRIVI 2.0 application meets the business and functional requirements.
- Gather information for estimating future support requirements.
- Create and share end-user training materials.
- Train the pilots participants, support and help desk teams.
- Provide support to pilot partners in executing pilots for AGRIVI 2.0 application throughout the project.

Pilot Scope

The scope of the pilots will depend on the business and functional requirements that AGRIVI 2.0 has to meet. A clear description of AGRIVI 2.0 services and features that will be included are described below.

Services and features for Farm accounts list:

- Crop management module
    - Tasks; Crop productions
- Wine management
    - Tasks; Wine cellars
- Finance module
    - Sales; Expenses; Assets; Loans; Budget; Transactions
- Resources module
    - People; Machinery; Fields; Legal entities; Sensor; Inventory; Item management; Documents
- Analytics module
    - Dashboards; Reports; Traceability

Services and features for Coop accounts list:

- Farm management
- Farmer register; Crop management
- People
- Inventory
- Machinery
- Finance
- Documents
- Analytics
- Messages

Other elements to consider in the first iteration of the pilots are the following:

1. Be sure to address international language issues in the pilots.
    a. AGRIVI 2.0 will be localized, languages implemented based on priority list provided by pilot partners.
2. The first iteration of the pilots, the focus will be on the most important business and functional requirements, processes that present the greatest risk, and events that are most likely to occur.
3. Prioritizing the features to be tested in the pilot is particularly important if the team plans to conduct multiple pilots.
    a. Crop management
    b. Traceability
    c. Resources
4. The plan is for all functionality to be available for the full functional roll out.

4.1.2 Pilot group and Pilot Sites

The pilots participant in AGRIVI 2.0 pilots were selected after having several meetings with partners that indicated an interest in the TheFSM project. They were selected based on: i) the objectives of the pilot, ii) the countries where we have partners and support staff, iii) specific technology requirements that can be piloted only by using particular sites or user groups. Several participants were selected in the focus groups organized in WP1 of TheFSM project using the same selection criteria defined to select the participants in the focus groups (see deliverable D1.1.). The table below shows the specific information related to AGRIVI 2.0 with regards to the pilot group.

Table 7: Pilot Groups and Pilot Sites AGRIVI 2.0.

Pilot	Country	TheFSM Resp	Applications	Group

P1	Greece	TÜV AU HELLAS	AGRIVI 2.0	Actors in the food supply chain
P2	Netherlands	WFSR	AGRIVI 2.0	Actors in the food supply chain
P3	Italy	Valoritalia	AGRIVI 2.0	Wine producers (all chain)
P4	Romania	TÜV AU Romania	AGRIVI 2.0	Food processors
P5	Croatia	AGRIVI	AGRIVI 2.0	Food processing company farmers
P6	Hungary	AGRIVI	AGRIVI 2.0	Food processing company farmers
P7	Poland	AGRIVI	AGRIVI 2.0	Food processing company farmers
P8	Cyprus	TÜV AU CYPRUS	AGRIVI 2.0	Actors in the food supply chain
P9	Egypt	TÜV AU HELLAS – TÜV AU EGYPT	AGRIVI 2.0	Actors in the food supply chain
P10	Jordan	TÜV AU HELLAS – TÜV AU JORDAN	AGRIVI 2.0	All actors in food supply chain

**Participants names and user liaison names are not shown in the table for GDRP reasons*

4.1.3 Pilot Plan Documents

The pilot plan includes the following documents: a training plan, a support plan, a communication plan, an evaluation plan, a risk and contingency plan, a backup and recovery plan, a schedule. Below a more detailed description of these plans is provided.

Pilot Training Plan

A training plan describes what the pilot participants need to know before they begin the pilot and describes how you plan to train them. The features of the AGRIVI 2.0 application the participants will be trained on are explained as follows:

- **AGRIVI Platform**

  Cooperative platform training:

  - Cooperative metadata – employee and machinery registry with sharing possibility
  - Inventory registry with transfer items
  - Season plan from financial side (company budget)
  - Finances tracking + loans
  - Contracts
  - Agronomic practices for farmer (production units) + recommendations for practices
  - Collaboration with employees on production units
  - Reports
  - Analysis

- **AGRIVI Farm account part 1**

  - Farm metadata – employee, machinery, and field registry
  - Inventory registry + manage items
  - Documents + labeling
  - Season plan from financial side (company budget)
  - Finances tracking/budget/loan/assets
  - Season planning + activity execution
  - Mobile application

- **AGRIVI Farm account part 2**

  - Reports
  - Analysis – productivity, profitability, cost savings, decisions based on data
  - NDVI
  - Sensors
  - Traceability
  - Fleet management

A plan to provide training for the support team and pilot participants is provided in the following table (Table 8). AGVIVI 2.0 trainer will be available for any additional questions regarding training and application work. In addition, a comprehensive training materials will be available on the educational platform.

Table 8: AGVIVI 2.0 training plan, topic, duration, and trainer.

No.	Topic	Description	Date	Duration (h)	Education time (h)	Trainer
1.	AGRIVI Platform	Cooperative platform training	Will be defined	2:00	1:45	Ines Hajdu - Customer Success
2.	AGRIVI Platform	AGRIVI Farm account part 1	Will be defined	2:00	1:45	Ines Hajdu - Customer Success
3.	AGRIVI Platform	AGRIVI Farm account part 2	Will be defined	2:00	1:45	Ines Hajdu - Customer Success

AGRIVI will provide the training just prior to pilot installation. Once the list of all pilot partners is received they will agree with the pilot leaders on the best time and date. Furthermore, all trainings will be recorded and available for later watch.

Pilot Support Plan

The support plan identifies who will provide support for pilot participants, the level of support required, and how users can report problems. AGRIVI support options:

1. In app support button for direct contact to our support team.
2. Dedicated email address for reporting issues and/or additional question not answered is

available in user manuals.

Defining Support Team Roles

For the AGRIVI 2.0 pilots, we identified who will support participants: project team members such as developers and testers were chosen. The information relevant to the support teams and roles AGRIVI 2.0 is provided in the table below (Table 9).

Table 9: Support Teams AGRIVI 2.0.

Pilot	Country	TheFSM Resp	Support team	Support team role
P1	Greece	TÜV AU HELLAS	Mavropoulos Konstantinos, Stelios Vaporidis, Ellie Vaggeli	Head of pilots, Pilots coordinator, Pilots project management
P2	Netherlands	WFSR	Yamine Bouzembrak, Hans Marvin	Project manager, Support project management
P3	Italy	Valoritalia	Francesca Romero, Cristina Micheloni, Andrea Zaffonato, Anna Polloni, Sonia Gastaldi	Use Case Leader, Technical manager, Technical Manager, Technical Manager, Technical Manager
P4	Romania	TÜV AU Romania	George Gheorghiu, Iuliana Demeter, Aurelia Grecu	Head of pilots, Pilots coordinators
P5	Croatia	AGRIVI	Maja Majdak, Filip Gerin Tanja Folnović	Project manager, Project manager Support team lead
P6	Hungary	AGRIVI	Maja Majdak, Filip Gerin Tanja Folnović	Project manager, Project manager Support team lead
P7	Poland	AGRIVI	Maja Majdak, Filip Gerin Tanja Folnović	Project manager, Project manager Support team lead
P8	Cyprus	TÜV AU CYPRUS	Sousanna Charalambidou	Pilots coordinator

P9	Egypt	TÜV AU HELLAS – TÜV AU EGYPT	Mavropoulos Konstantinos, Stelios Vaporidis, Ellie Vaggeli	Head of pilots, Pilots coordinator, Pilots project management
P10	Jordan	TÜV AU HELLAS – TÜV AU JORDAN	Mavropoulos Konstantinos, Stelios Vaporidis, Ellie Vaggeli	Head of pilots, Pilots coordinator, Pilots project management

**Emails and phone numbers are not shown in the table for GDRP reasons*

Problem Tracking and Resolution

When problems arise during the AGIRIVI 2.0 pilot testing, participants have systems and channels to report them to the team.

1. In app support button for direct contact to our support team.
2. Dedicated email address for reporting issues and/or additional question not answered is available in user manuals.

The issues severity and resolution for AGRIVI 2.0 are shown in the Table 9.

Table 10: Issue severity and resolution AGRIVI 2.0.

Issue severity*	Severity description and example	Reaction time	Bypass time	Repair time
Critical	Service is not available, none of the users can access their account data via web or mobile application. Example: All users trying to open up a web application get redirected to an error page immediately.	4 WH	8 WH	16 WH
High	There's a defect which affects critical functionality or critical data. It does not have a simple workaround. Example: Users can't select anything in the date picker, app automatically crashes.	24 WH	40 WH	80 WH

Normal	There's a defect which affects major functionality or major data. It has a workaround but is not obvious and is difficult. Example: Users can't export finances to Pdf/Excel from the Sales or Expenses page, but they can do the same thing if they go to Reports – Finances - Sales/Expenses.	24 WH	120 WH	160 WH
Low	There's a defect which affects minor functionality or non-critical data and has an easy workaround, or the defect does not affect functionality or data and it does not need a workaround since it does not impact productivity or efficiency. It is merely an inconvenience. Example 1: Filter on the Tasks screen is not working properly – tasks from seasons that are not set as 'In progress' are not shown. Example 2: Show/Hide filter on finances screen is sometimes displayed very strangely.	24 WH	-	400 WH

*Term definitions

Issue severity - The degree of impact that a defect has on the operation of a component or system.

Working Days - Days from Monday to Friday, with the exclusion of public holidays in Croatia.

Working hours (WH) – 8:00 AM to 4:00 PM (CET/CEST) on Working Days.

Outside working hours (OWH) - Weekends and public holidays in Croatia, and hours 4:00 PM - 8:00 AM (CET/CEST) on Working Days.

Reaction – Written acknowledgement that the issue report has been received by Agrivi personnel.

Bypass – Written definition of a workaround that enables end users to execute the desired action using a different workflow.

Repair - Permanent and complete removal of the issue resulting in the restoration of the full functionality of the Service.

Communication Plan

The table below presents the information required for the communication plan. It is filled with each activity that needs communication during the AGRIVI 2.0 pilots.

Table 11: Communication Plan AGRIVI 2.0.

Activity	Participants	Channel	When	Responsible

Meetings with the pilots participants	Pilots leaders and pilots participants	Online meetings and emails	Q3, Q4, 2021	Pilots leaders
Provide to pilots participants information on the pilots (Slides, documents, etc)	Pilots participants	Emails	Q3, Q4, 2021	Pilots leaders
Organize the pilot session	Pilots participants	Online Teleconferencing system	Q4, 2021	Pilots leaders
Organize training sessions	Pilots leaders and pilots participants	Youtube, email, educational platform	Q4, 2021	Tanja Folnovic
Record and provide the training material	Pilots leaders and pilots participants	Youtube, web-based resources	Q4, 2021	Giannis Stoitsis, Vivi Katifori
Collect evaluation feedback	Pilots participants	Online questionnaire	Q4, 2021	Pilots leaders
Technical issues and support	Pilots participants	email, educational platform materials, in app reporting	Q4, 2021	Tanja Folnovic

As a part of education, pilot partners will get the full picture of AGRIVI application functionalities and benefits to their everyday business. All concerns pilots partners find during the training phase, they will be able to express to our AGRIVI experts.

Evaluation Plan

The evaluation plan describes the way the feedback from the pilot participants will be collected and assessed. The evaluation plan contains information on the sources of feedback and how to collect this feedback. All participants will receive the questionnaire we will use to collect relevant feedback. The details of this section will be covered in sections (4.3.4 and 4.3.5)

Risk and Contingency Plan

The risk and contingency plan describes the risk factors that could prevent the pilot from being deployed successfully. Contingency plans and SLA are already implemented in AGRIVI and will

apply to all pilots related to AGRIVI 2.0. In case of any unpredicted issues our customers services are available for contact.

Backup and Recovery Plan

The backup and recovery plan establishes guidelines and procedures to prevent problems that might cause data loss or interruptions to your organization's operations, and to allow recovery as quickly as possible if such events do occur. Backup and recovery plans are already integral part of AGRIVI and will apply to all pilots related to AGRIVI 2.0.

Pilot Schedule

One of the earliest activities in planning a pilot is to draft a schedule, which is usually included in the master project schedule.

Table 12: Pilot Schedule AGRIVI 2.0.

Pilot country	TheFSM Resp	Estimated period for the first pilot iteration	Estimated period for the second pilot iteration	Estimated period for the last pilot iteration
Greece	TÜV AU HELLAS	Q4, 2021	Q2, 2022	Q4, 2022
Netherlands	WFSR	Q4, 2021	Q2, 2022	Q4, 2022
Italy	Valoritalia	Q4, 2021	Q2, 2022	Q4, 2022
Romania	TÜV AU Romania	Q4, 2021	Q2, 2022	Q4, 2022
Cyprus	TÜV AU CYPRUS	Q4, 2021	Q2, 2022	Q4, 2022
Egypt	TÜV AU HELLAS – TÜV AU EGYPT	Q4, 2021	Q2, 2022	Q4, 2022

Jordan	TÜV AU HELLAS – TÜV AU JORDAN	Q4, 2021	Q2, 2022	Q4, 2022

4.2 Prepare for the Pilot

After the creation of a pilot plan, the second step in a pilot is its preparation.

4.2.1 Prepare Pilot Sites

The AGRIVI 2.0 application will be tested one month before the pilot is scheduled to begin.

4.2.2 Prepare Pilot Participants

The pilots leaders will define the pilot start date with their partners. As the start date for the pilot approaches (i.e. 2 weeks), the pilot participants will receive a presentation that contain the following information:

- Scheduled date for the start of the pilot and the deployment plans.
- The type of training the participants will receive and the scheduled date.
- Procedures the participants need to follow on their computers to be able run the pilot.
- Contact names and numbers for support
- The (personal) log-in codes, if necessary.

4.2.3 Test the Rollout Process

Time is scheduled during the testing phase for the pilot team to develop, document and test the rollout process.

4.3 Deploy and Test the Pilot

The third step in developing a pilot is its deployment and testing.

4.3.1 Conduct a Trial Run of the Pilot

The deployment of the AGRIVI 2.0 application will be tested with the pilot team first. Performing this trial run of the pilot ensures that any problems with the deployment will be identified before the application has to go live. The problems identified during the trial run will be solved before the deployment of the pilot.

4.3.2 Deploy the Pilot

The application AGRIVI 2.0 is web-based, no specific installations are needed for the pilot run, however user access should be ensured before deployment by verifying that user accounts are properly created and that the users have appropriate web browsers installed in the machines where they will work. Having addressed the problems identified during the trial run, the pilot will be ready for deployment.

4.3.3 Resolve Issues during the Pilot

During the pilot, the participants perform the pilots tasks and they will be able to report any problems they encounter when using the AGRIVI 2.0 application. They will be able to do so using an incident-tracking system. Problems that are reported by the pilots participants will be reviewed, prioritized, and fixed according to procedures outlined in the issue resolution plan. Since, multiple pilots will be scheduled in Q4 2021, the results of the first pilots will be evaluated and the problems found will be resolved before beginning the next pilots.

4.3.4 Monitor the Pilot

During the pilot, the pilot team of each pilot will continually monitor the pilot looking for bottlenecks and areas that need to be fine-tuned. The team will check problems reported and look for trends and for problems in the application AGRIVI 2.0 performance. Since, the second iteration of the pilot is scheduled in Q2 2022, the results of the first pilots will be evaluated and the problems found will be resolved before beginning the next iteration. .

Pilot Evaluation

During the pilot, participants will provide feedback about how well the design and features of the AGRIVI 2.0 application are working. This feedback is crucial because based on this information the decision will be made to improve the application and conduct further piloting tests.

4.3.5 Obtain Feedback

Feedback sources

The primary source of feedback will be the pilot participants (potential users of TheFSM applications), which in the case of AGRIVI 2.0 is a group of individuals with a wide variety of occupations, computer skills and experiences. Because of the variety in the kind of user, it is important to collect the following information:

- Background information on the participants.
- System Usability Scale.
- The evaluation of AGRIVI 2.0 application.

For this information the following questionnaires will be used.

- Background information on the participants.
- System Usability Scale.
- The evaluation of AGRIVI 2.0 application.

Incident-tracking System

As mentioned above, the participants will be able to report any problems they encounter when using the AGRIVI 2.0 application using an incident-tracking system implemented as an alerting module of AGRIVI 2.0 .

Metrics on Task Performance

The pilot participants will perform certain tasks with AGRIVI 2.0. During these tasks their performance will be measured. The following metrics will be analyzed when participants are given a timed task:

- Number of errors
- Percentage of the task completed successfully
- Number of hints/prompts needed to complete the task
- Time to complete the task
- Major problems/obstacles associated with each task

Storage of Feedback

The results from the questionnaires and the reported problems will be stored in Excel in the google drive of TheFSM project.

Analyse Feedback

After having collected and stored the feedback, the next step is to analyze it. The underlying goal here is to transform the feedback into the metrics and standards used to assess the usability of AGRIVI 2.0 and the objectives of the pilot.

Report Findings

Directly after the pilot a first preliminary analysis will be conducted that gives insight into the larger trends and patterns. This analysis will take place in the days following the end of the pilot and results will be sent to the relevant people after at maximum 3 days. The goal here is to identify hot spots (worst problems) that have to be fixed and communicate these (and only these) findings to the development team so they can work on these issues immediately without having to wait for the final report.

4.3.6 The Next Step

After the feedback has been collected and analyzed, there will be sufficient information to evaluate whether the delivered application meets the design specification, as well as the business requirements. Depending on how well the pilot meets the success criteria, there are a number of strategies that can be employed at this point in the pilot deployment:

- Stagger the pilot forward. If the pilot was deemed partially successful, deploy the pilot to the next pilot group or, if your team has planned to conduct multiple pilots, proceed with the next pilot.
- Patch the pilot and continue. If the pilot is not successful, but the issues raised are easily fixed, issue the same pilot group a "patch," a fix to existing code.

5 FOODINSPECTOR

5.1 Pilot Plan

All FOODINSPECTOR pilot plans will be based on this document describing all elements needed to be considered, but not necessarily all features need to be included in each pilot. This will depend on the needs and requirements of each specific pilot. Processes supporting the FOODINSPECTOR pilots will follow the approach applied also in FOODAKAI 2.0. The FOODINSPECTOR pilot plan steps are detailed in the following subsections.

5.1.1 Pilot Scope and Objectives

The first step in planning a pilot is to define the objectives and the scope of the pilot.

Pilot Objectives

In the first iteration of the pilots, the main goals of TheFSM pilots related to FOODINSPECTOR are:

- Ensure that the system works properly in a controlled environment.
- Ensure that the implementation of the functional requirements identified in the first iteration for the FOODINSPECTOR indeed address user needs and record points for improvement.
- Develop and test end-user training materials.
- Train the pilots participants, support and help desk teams.
- Confirm and with the users the potential market value of the system.

Pilot Scope

The scope of FOODINSPECTOR pilots will depend on the business and functional requirements that will be ready to test in Q4 2021. The areas of functionality that the pilot implementation will consider are the following:

1. For the first pilot iteration, taking into account that the system will not be ready for full deployment the pilots will proceed with evaluation in a controlled setting and specific

duration.

2. Internationalization will be available in the second iteration of the pilots. For the first iteration the tools will be offered in the English language. This issue should be taken into account while recruiting users for the pilot.
3. Evaluation will proceed through scenarios leading the users through specific workflows of tasks that will allow them to experience the variety of functionality of the system. In this way the most stable features will be tested in context.
4. Less advanced features and functionality can be demonstrated to the users for feedback, if hands-on testing is not possible.

5.1.2 Pilot Group and Pilot Sites

For a pilot, the candidates were selected after having several meetings with partners that indicated an interest in the TheFSM technology. The selection of a pilot site or sites often depends on the type and location of the pilot participants who have been selected and the number of support staff available to help them. The number of pilot sites and the size of the pilot users group were defined based on: i) the objectives of the pilot, ii) the countries where we have partners and support staff, iii) specific technology requirements that can be piloted only by using particular sites or user groups. Few participants were selected in the focus groups organized in WP1 of TheFSM project using the same selection criteria defined to select the participants in the focus groups (see deliverable D1.1.). The table below shows the specific information related to FOODINSPECTOR with regards to the pilot group.

Table 13: Pilot Groups and Pilot Sites FOODINSPECTOR.

Pilot	Country	TheFSM Resp	Applications	Group
P1	Greece	TÜV AU HELLAS	FOODINSPECTOR	Actors in the food supply chain
P2	Netherlands	WFSR	FOODINSPECTOR	Actors in the food supply chain

P3	Italy	Valoritalia	FOODINSPECTOR	Wine producers(all chain)
P4	Romania	TÜV AU Romania	FOODINSPECTOR	Food processors
P8	Cyprus	TÜV AU CYPRUS	FOODINSPECTOR	Actors in the food supply chain
P9	Egypt	TÜV AU HELLAS – TÜV AU EGYPT	FOODINSPECTOR	Actors in the food supply chain
P10	Jordan	TÜV AU HELLAS – TÜV AU JORDAN	FOODINSPECTOR	All actors in food supply chain

**Participants names and user liaison names are not shown in the table for GDRP reasons.*

5.1.3 Pilot Plan Documents

The pilot plan of the FOODINSPECTOR includes the following documents: a training plan, a support plan, a communication plan, an evaluation plan, a risk and contingency plan, a backup and recovery plan, and a schedule.

Pilot Training Plan

A training plan describes what the pilot participants need to know before they begin the pilot and describes how you plan to train them.

FOODINSPECTOR will be available for pilot use with in-built help in the form of a digital user manual, describing step by step its basic operations. However, to ensure the smooth initialization and operation of the pilots, live training will be available in the form of webinars.

Three 60' online training webinars will be organized at pre-arranged dates and times so that all pilot users have the chance to participate. During the training, Agroknow representatives will walk the users through all the FOODINSPECTOR features and functionalities. A recording of this training will be made available to the users to keep it for future reference if needed, as well as to

be used by those users unable to be present in any of the offered webinar sessions.

Pilot Support Plan

The support plan identifies who will provide support for pilot participants, the level of support required, and how users can report problems.

Defining Support Team Roles

For each FOODINSPECTOR pilot, we identified the support teams and their roles (see Table 14).

Table 14: Support Teams FOODINSPECTOR.

Pilot	Country	TheFSM Resp	Support team	Support team role
P1	Greece	TÜV AU HELLAS	Mavropoulos Konstantinos, Stelios Vaporidis, Ellie Vaggeli	Head of pilots, Pilots coordinator, Pilots project management
P2	Netherlands	WFSR	Yamine Bouzembrak, Hans Marvin	Project manager, Support project management
P3	Italy	Valoritalia	Francesca Romero, Cristina Micheloni, Andrea Zaffonato, Anna Polloni, Sonia Gastaldi	Use Case Leader, Technical manager, Technical Manager, Technical Manager, Technical Manager
P4	Romania	TÜV AU Romania	George Gheorghiu, Iuliana Demeter, Aurelia Grecu	
P5	Croatia	AGRIVI	Tanja Matosevic, Tanja Folnovic	Project manager, Support team lead
P6	Hungary	AGRIVI	Tanja Matosevic, Tanja Folnovic	Project manager, Support team lead
P7	Poland	AGRIVI	Tanja Matosevic, Tanja Folnovic	Project manager, Support team lead
P8	Cyprus	TÜV AU CYPRUS	Sousanna Charalambidou	Pilots coordinator

P9	Egypt	TÜV AU HELLAS - TÜV AU EGYPT	Mavropoulos Konstantinos, Stelios Vaporidis, Ellie Vaggeli	Head of pilots, Pilots coordinator, Pilots project management
P10	Jordan	TÜV AU HELLAS - TÜV AU JORDAN	Mavropoulos Konstantinos, Stelios Vaporidis, Ellie Vaggeli	Head of pilots, Pilots coordinator, Pilots project management

**Emails and phone numbers re not provided in the table for GDPR reasons.*

Problem Tracking and Resolution

When problems arise during FOODINSPECTOR pilot, participants have a way to report them to the team.

Response time for technical issues

Issue reports cover problems in the operation of the FOODINSPECTOR modules and data that are provided in the context of the pilot operation. The end user is informed about the status of the submitted issue through email messages. Live chat with a human solution specialist, responding for all the business days and working hours in European time zones (8:00 - 18:00 CET), North America time zones (8:00 - 16:00 CDT), Australian time zones (14:00 - 21:00 AEST), Asia time zones (12:00 - 21:00 JST) and African time zones (9:00 - 18:00 WAT). The messages that are submitted to the chat outside these time zones are replied through email within 12 hours. All requests are being addressed within 24h (during business days). The response time for issues submitted during weekends or holidays starts counting on the next business day (8:00 CET).

Resolution time for technical issues

Any requested issue received will be stored by the FOODINSPECTOR internal ticketing system. In terms of software and data issues, the request is processed and classified into one of the predefined ticket categories (e.g., system issue, data accuracy issue improvement request, new functionality request). For such kinds of requests, the resolution time is 1 business day. In terms of other types of issues, our team is acknowledging them within 24h and works on their

appropriate reply and resolution within 3 business days. In terms of software and data issues, the resolution time is within 1 business day.

For the needs of support and reporting, an account manager from Agroknow will be assigned to support each pilot and their support team . This person will serve as their point of reference and will support, train and guide each pilot user so that they get maximum value from FOODINSPECTOR and ensure the smooth operation of the pilot. The work of the account manager will be directly supervised by Agroknow's Head of Customer Success.

FOODINSPECTOR Escalation Matrix

The Escalation matrix for FOODINSPECTOR service is presented in the following table. Any issue and feedback can be submitted to the customer support team using the support email and/or the live chat tool. Customer success manager tracks the issue and escalates it to the appropriate level, in order to be handled.

Table 15: Escalation matrix FOODINSPECTOR.

Escalation level	Responsable	Channel*	Phone*	How/When to Escalate
1	Customer Support Team	-	-	Difficulty in using the platform, product or data issues
2	Customer success manager	-	-	Training & onboarding issues, reporting issues, contact points, feedback from end-users
3	Head of customer success	-	-	New service request, feedback from the management, product value issues.
4	Head of FOODISPECTOR product	-	-	Serious issue of the technology or data/ New features request

**Emails and phone numbers are not shown in this table for GDPR reasons.*

Communication Plan

The communication plan is used to identify the type of information that will be communicated, to whom it will be communicated, by what means, and how often.

Pilot leaders with the support of the rest of the consortium partners when needed, identify viable participants for the pilots. After the initial communication and the expression of interest for participation, a series of meetings, face to face or remote, will be scheduled as needed with the objective to:

1. Provide to the possible participants more information on the nature of the pilot and what would be needed on their part in terms of time, effort etc.
2. Describe the type of testing they are to perform.
3. Obtain their commitment to the pilot.
4. Provide them with a timeline for the pilot.
5. Clarify their responsibilities.
6. Describe the type of testing they are to perform.

The first point of communication for each pilot, are the pilot leaders with the support of relevant responsible persons per issue that may arise with FOODINSPECTOR, as per the escalation matrix (Table 16).

Table 16: Communication Plan FOODINSPECTOR.

Activity	Participants	Channel	When	Responsible
Meetings with the pilots participants	Pilots leaders and pilots participants	Online meetings and emails	Q3, Q4, 2021	Pilots leaders
Provide to pilots participants information on the pilots (Slides, documents, etc)	Pilots participants	Emails	Q3, Q4, 2021	Pilots leaders

Organize the pilot session	Pilots participants	Online Teleconferencing system	Q4, 2021	Pilots leaders
Organize training webinars	Pilots leaders and pilots participants	Teleconferencing system	Q4, 2021	Giannis Stoitsis, Timos Lanitis
Record and provide the training material	Pilots leaders and pilots participants	Youtube, web-based resources	Q4, 2021	Giannis Stoitsis, Vivi Katifori
Collect evaluation feedback	Pilots participants	Online questionnaire	Q4, 2021	Pilots leaders
Technical issues and support	TBD	Issue tracking sustem, Live chat, online questionnaire	Q4, 2021	Giannis Stoitsis, Timos Lanitis

Regular and comprehensive communication with pilot participants helps to ensure that participants are committed to the success of the pilot project. Mechanisms for communicating information about the pilots will be used such as TheFSM website, frequently asked questions pages, and status reports.

Evaluation Plan

The evaluation plan describes the way the feedback from the pilot participants will be collected and assessed. The evaluation plan contains information on the sources of feedback and how to collect this feedback. It then continues with a section on how to analyze the results and concludes with a discussion on how to decide to continue with the pilot. The details of this section will be covered in sections (5.3.4 and 5.3.5)

Risk and Contingency Plan

The risk and contingency plan describes the risk factors that could prevent the pilot from being deployed successfully. In the case of FOODINSPECTOR pilots, as it is a solution based on software systems, no specialized hardware is needed for the successful deployment of the pilots and the currently identified risks are mostly software related. These include the ones presented in the following table.

Table 17: FOODINSPECTOR Risk and Contingency Plan.

Risk	Mitigation
Requirements' analysis led to several high priority user stories. Maybe it will not be possible to cover all of them within the 6 months development time until the pilot start.	With an early start on development and allocation of additional resources the time plan can be kept. The prioritization of the user stories is also helpful to guide the priorities in development.
Requirements' analysis showed that existing workflows include documents in difficult formats and it will be challenging to achieve automated processing.	In this case maybe it will be needed to make them available at their current format.
It was initially thought that GLN (GS1) number would be available for all companies, but it is not.	A possibility examined is to use VAT number instead.
It is a risk to ensure the critical mass of users for the pilots, enough to get useful feedback.	This has been mitigated with continuous and rigorous recruitment of users by the whole consortium.

Backup and Recovery Plan

The backup and recovery plan establishes guidelines and procedures to prevent problems that might cause data loss or interruptions to your organization's operations, and to allow recovery as quickly as possible if such events do occur.

FOODINSPECTOR utilizes technologies and cloud platforms that apply security best practices and manages security so that the pilot users can focus on the risk assessment and prediction. The platform is designed to protect customers from threats by applying security controls at every layer from physical to application, isolating application layer and data layer, and with its ability to rapidly deploy security updates without interaction or service interruption.

FOODINSPECTOR's physical infrastructure is hosted and managed within Amazon's and Hetzners' secure data centers. Both data center providers continually manage risk and undergo recurring

assessments to ensure compliance with industry standards. The data centers operations have been accredited under:

- ISO 27001
- SOC 1 and SOC 2/SSAE 16/ISAE 3402 (Previously SAS 70 Type II)
- PCI Level 1
- FISMA Moderate
- Sarbanes-Oxley (SOX)

In addition, there is a disaster recovery plan in place and regular testing of that plan will be conducted at least twice a year. The recovery time is less than 12 hours. More specifically, the platform automatically restores the FOODINSPECTOR applications and databases in the case of an outage. We are using a platform as a service that is designed to dynamically deploy applications within the cloud, monitor for failures, and recover failed platform components including customer applications and databases.

The platform as a service that we use to deploy the FOODINSPECTOR platform is designed for stability, scaling, and inherently mitigates common issues that lead to outages while maintaining recovery capabilities. It maintains redundancy to prevent single points of failure, can replace failed components, and utilizes multiple data centers designed for resiliency. In the case of an outage, the platform is deployed across multiple data centers using current system images and data is restored from backups. It reviews platform issues to understand the root cause, impact to customers, and improve the platform and processes.

Pilot Schedule

The first iteration of the pilots will be in the end of 2021 Q4, as shown in Table 18. Each pilot leader will define the exact date with the partners involved in his pilot.

Table 18: Pilot Schedule FOODINSPECTOR.

Pilot Country	TheFSM Resp	Estimated period	Estimated period	Estimated period

		for the first pilot iteration	for the second pilot iteration	for the last pilot iteration
Greece	TÜV AU HELLAS	Q4, 2021	Q2, 2022	Q4, 2022
Netherlands	WFSR	Q4, 2021	Q2, 2022	Q4, 2022
Italy	Valoritalia	Q4, 2021	Q2, 2022	Q4, 2022
Romania	TÜV AU Romania	Q4, 2021	Q2, 2022	Q4, 2022
Cyprus	TÜV AU CYPRUS	Q4, 2021	Q2, 2022	Q4, 2022
Egypt	TÜV AU HELLAS – TÜV AU EGYPT	Q4, 2021	Q2, 2022	Q4, 2022
Jordan	TÜV AU HELLAS – TÜV AU JORDAN	Q4, 2021	Q2, 2022	Q4, 2022

5.2 Prepare for the Pilot

After the creation of a pilot plan, the second step in a pilot is its preparation.

5.2.1 Prepare Pilot Sites

The FOODINSPECTOR application will be tested one month before the pilot is scheduled to begin.

5.2.2 Prepare Pilot Participants

The pilots leaders will define the pilot start date with their partners. As the start date for the pilot approaches (i.e. 2 weeks), the pilot participants will receive a presentation that contain the following information:

- Scheduled date for the start of the pilot and the deployment plans.

- The type of training the participants will receive and the scheduled date.
- Procedures the participants need to follow on their computers to be able run the pilot.
- Contact names and numbers for support
- The (personal) log-in codes, if necessary.

5.2.3 Test the Rollout Process

Time is scheduled during the testing phase for the pilot team to develop, document and test the rollout process.

5.3 Deploy and Test the Pilot

The third step in developing a pilot is its deployment and testing.

5.3.1 Conduct a Trial Run of the Pilot

The deployment of the FOODINSPECTOR application will be tested with the pilot team first. Performing this trial run of the pilot ensures that any problems with the deployment will be identified before the application has to go live. The problems identified during the trial run will be solved before the deployment of the pilot.

5.3.2 Deploy the Pilot

Having addressed any possible issue identified during the trial run, the pilot will be ready for deployment. Taking into account that the tool is web-based, no specific installations are needed for the pilot run, however user access should be ensured before deployment by verifying that user accounts are properly created and that the users have appropriate web browsers installed in the machines where they will work.

5.3.3 Resolve Issues during the Pilot

During the pilot, the participants perform their regular tasks and they will be able to report any problems they encounter when using the FOODINSPECTOR application. They will be able to do

so using an incident-tracking system, implemented as an alerting module in FOODINSPECTOR applications. Problems that are reported by the pilots participants will be reviewed, prioritized, and fixed according to procedures outlined in the issue resolution plan. Since, multiple pilots will be scheduled in Q4 2021, the results of the first pilots will be evaluated and the problems found will be resolved before beginning the next pilots.

5.3.4 Monitor the Pilot

During the pilot, the pilot team of eat pilot will continually monitor the pilot looking for bottlenecks and areas that need to be fine-tuned. The team will check problems reported and look for trends and for problems in the application FOODINSPECTOR performance. Since, the second iteration of the pilot is scheduled in Q2 2022, the results of the first pilots will be evaluated and the problems found will be resolved before beginning the next iteration.

Pilot Evaluation

During the pilot, participants will provide feedback about how well the design and features of the FOODINSPECTOR application are working. This feedback is crucial because based on this information the decision will be made to improve the application and conduct further piloting tests.

6 DATA MANAGEMENT HANDLING PLAN (DMHP)

6.1 Introduction

The Data Management Handling Plan (DMHP) analyses the main elements of the data management policy, which will be implemented at TheFSM Pilot sites, with respect to the processing of personal and non-personal data. Furthermore, the DMHP outlines some of the measures taken to ensure compliance with the provisions of the General Data Protection Regulation (GDPR) relating to the processing of personal data. The DMHP is intended to cover the complete life cycle of the data collected, created and processed in the course of the pilots.
The DMHP and will outline the following:

- The types of research data that will be generated or collected during the pilot;
- How the research data will be processed and preserved;
- Parts of the datasets to be shared for verification or re-use;
- The standards that will be used;
- The provisions in place for data security;
- The handling of research data after the end of the pilots and
- Data protection and ethical aspects.

This DMHP aims to monitor the privacy and confidentiality of data, as well as ensure that the legal and ethical standards for data collection, generation, use, storage, share and transfer are applied during the pilot and validation phase of the project. The DMHP seeks to establish compliance with the management of data, as foreseen in the Grant Agreement, Consortium Agreement, the General Data Protection Regulation (GDPR) as well as other relevant Regulations and standards. Furthermore, the DMHP seeks to ensure that all activities which take place during the pilots are compliant with the Guidelines on the Implementation of Open Access to Scientific Publications and Research Data, supported by the European Research Council under Horizon 2020 (ERC, 2017).

6.2 Methodology

6.2.1 Guidelines on FAIR Data Management

TheFSM Data Management follows the Guidelines on FAIR Data Management in Horizon 2020, released by the European Commission Directorate General for Research & Innovation (FAIR, 2016). In accordance with these guidelines, the management and organization of data should be based on FAIR principles. The FAIR principles dictate that data and related research outputs must be findable, accessible, interoperable and reusable. These principles provide guidance for scientific data management and are relevant to all stakeholders in research projects.

6.2.2 Gathering of Information for TheFSM Pilot Data Management Handling Plan

The information contained in this DMHP was gathered through a questionnaire (Appendix G) which was circulated among FSM Pilot leaders and technical partners involved in the pilots. The questionnaire is derived from the "Guidelines on FAIR Data Management" and arranged according to the template provided by Horizon 2020. Thereafter, the information provided by Partners was transferred to FAIR dataset tables depicted in the sections below. The FAIR tables present a concise survey of the key features of the life cycle of data in the context of TheFSM pilots. The following Partners contributed towards the formulation of the DMHP.

Pilot Leaders: TÜV AU Hellas, TÜV AU Romania, TÜV AU Cyprus, Valoritalia and WFSR.

Technical Partners: AGRIVI and AGROKNOW.

6.3 Data Management on TheFSM Applications

During the pilot and validation phase of TheFSM project, the AGRIVI 2.0, FOODAKAI 2.0 and FOODINSPECTOR applications will be tested to validate all requirements of TheFSM platform. Most of the data collected or generated in the pilots will be processed through the three applications. Data not processed via the applications will be visualised and processed by each pilot leader using independent software such as Google Drive and Google Forms (as depicted in Table 19).

The following tables provide details regarding the management of data on the AGRIVI 2.0, FOODAKAL 2.0 and FOODINSPECTOR applications in the context of TheFSM pilots. The table is organised in accordance with the FAIR principles.

Table 19: FAIR lifecycle of data: AGRIVI 2.0, FOODAKAI 2.0 and FOODINSPECTOR

DATA PRODUCTION AND STORAGE	
Data Generated/Collected	The consent of the Pilot participants forms the legal basis for the processing of personal data in accordance with Article 6(1)(a) of the GDPR. **AGRIVI 2.0:** Personal data: first name, last name, address (optional), country, phone, email address. Non-Personal Data: Agrotechnical practices and farm processes data, farmer contact data, crop production data, farmer contracting data and food processing company data. **FOODAKAI 2.0 & FOODINSPECTOR:** Personal Data: Personal information and preferences of the end-user that is using the application, including Name, Surname, Phone, Job title, ingredients and hazards preferences Non-Personal Data: Food recalls, border rejections, laboratory testing data, companies information, country risk indicators, prices, child labour indicators, food hazards, food ingredients, inspections/audits results. As well as, information about the suppliers, the ingredients, finished products, lab tests, audits results and certificates that a company has.
Data Format	**AGRIVI 2.0:** Data will be collected via end user input in AGRIVI FMS software and stored in a database. User data is anonymized when new functionalities are being tested in AGRIVI, access to personal user data is limited to AGRIVI employees with admin rights only. **FOODAKAI 2.0 & FOODINSPECTOR:** CSV, JSON, Html, xls.
Reproducibility	**AGRIVI 2.0:** Data backups of data are created every 3 hours. AGRIVI

	keeps copies of the database in case of memory loss or crash to keep the application operational and data saved. **FOODAKAI 2.0 & FOODINSPECTOR:** The processed data can be reproduced because we are also storing the original version of the collected data.
Data Size	**AGRIVI 2.0:** Farm data will be collected on a daily basis depending on crop vegetation stage and the actual farmer's activities in the field/farm. Traceability data will be collected on a daily basis depending on the intensity of farm activities throughout the season. Supplier information will be collected at the start of the pilot and will not change often. **FOODAKAI and FOODINSPECTOR:** More than 200M food safety data records are collected and processed by Agroknow and will be used in the FOODAKAI 2.0 and the FOODINSPECTOR application. (500GB).
Software tools for creating/processing /visualizing data	**AGRIVI 2.0:** Agrivi – FMS (Farm Management Software). **FOODAKAI 2.0 & FOODINSPECTOR:** Elasticsearch, Python, HighCharts, Java, Spring MVC.
Use of pre-existing data	**AGRIVI 2.0:** No pre-existing data will be used in the context of the pilots. **FOODAKAI 2.0 & FOODINSPECTOR:** pre-existing food safety data that are published by the National Authorities.
Storage and Backup Strategy	**AGRIVI 2.0:** Unlimited cloud storage. Data backups are created every 3h. Further information is contained in this document, please see the subsection *Backup and Recovery Plan* in section 4.1.3. **FOODAKAI 2.0 & FOODINSPECTOR:** Data is stored on the cloud and dedicated virtual machines. Daily incremental backup. Further information is contained in the subsection *Backup and Recovery Plan* in section 3.1.3 for FOODAKAI 2.0 and section 5.1.3 for FOODINSEPCTOR.

ORGANIZATION, DOCUMENTATION AND METADATA OF DATA INTENDED TO BE PUBLISHED	
Standards for Documentation and Metadata	**AGRIVI 2.0:** Not Applicable. **FOODAKAI 2.0 & FOODINSPECTOR:** AGROKNOW Internal data model that is based on FRBR.
Best Practices/Guidelines for Data Management	**AGRIVI 2.0:** Not Applicable. **FOODAKAI 2.0 & FOODINSPECTOR:** Best practices defined by GODAN and RDA for managing agrifood data. EFSA vocabularies for the classification of products and hazards were used.
Tools for Formatting Data	**AGRIVI 2.0:** Not Applicable . **FOODAKAI 2.0 & FOODINSPECTOR**: Tools developed by the EU Big Data Grapes project were used to format data.
Directory and File Naming Convention	**AGRIVI 2.0:** Not Applicable. **FOODAKAI 2.0 & FOODINSPECTOR:** The data is organized following the data structure of elasticsearch and the Postgresql.
Project and Data Identifiers	**AGRIVI 2.0:** Not Applicable. **FOODAKAI 2.0 & FOODINSPECTOR:** Project Identifiers – Not applicable. Data Identifiers – internal identification.
Automatic Creation of Metadata	**AGRIVI 2.0:** Not Applicable. **FOODAKAI 2.0 & FOODINSPECTOR:** Yes, for the production and hazard metadata fields of food safety incidents.
DATA ACCESS	

Risks to Data	**AGRIVI 2.0:** Unauthorized access, loss or destruction of data and data breach. **FOODAKAI 2.0 & FOODINSPECTOR:** Insufficient protection of end user's personal information. Insufficient protection of business critical information that a company has stored in FOODAKAI 2.0 and Inspector application. Data breach during the exchange of information between different systems.
Risk Management	**AGRIVI 2.0:** • Risk is transferred to data centres where adequate infrastructure for providing service for our core product (farm management software) and the services Agrivi uses in daily operations is ensured. • To access any user data (e.g. via database access), a person needs to have access to the database, which is regulated by network access restrictions and login credentials. • Further information is contained in this document, please see subsection *Risk and Contingency Plan* in section 4 AGRIVI 2.0. **FOODAKAI 2.0 & FOODINSPECTOR:** For the protection of end user's and company's information AGROKNOW have the following policy: • Our basic policy is that nothing outside of Heroku, which is our cloud service, has open communication with our database. The database resides on closed hub that can only communicate with our application via the security of Heroku. • User data that are stored to production DBs, and cannot be accessed by non-production environments. As for the replication of data, currently there is no procedure to ensure that production data are not replicated to other environments. • Further information is contained in this document, please see *Table 5: FOODAKAI 2.0 Risk and Contingency Plan and Table 17: FOODINSPECTOR Risk and Contingency Plan.*
Data Access & Access Requirements	**AGRIVI 2.0:** User needs to have valid user login credentials for accessing Agrivi FMS (email address and password). **FOODAKAI 2.0 & FOODINSPECTOR:** We have an authentication and authorization layer to access • The non-personal data collected by the National Authorities and International organizations; • The user personal data and preferences; • The business critical information such as suppliers, ingredients, products, lab tests, certificates and audits.

Correct execution of the access process	**AGRIVI 2.0:** • To access his personal data, a person needs to have valid user login credentials for Agrivi FMS. • To access any user data (e.g. via database access), a person needs to have access to the database, which is regulated by network access restrictions and login credentials. This is limited to AGRIVI technology management. • Correct execution of the access process is checked by Quality Assurance. **FOODAKAI 2.0 & FOODINSPECTOR:** • Data access rights per role are documented. • Only authorized Agroknow employees have access to the data.

Procedure to address the possibility of a data breach	**AGRIVI 2.0:**
	• Internal security & data protection procedures.
	  ○ ISO standard compliance on security
	  ○ Azure cloud security certificates
	  ○ Internal company data security policy
	  ○ GDPR compliant
	• Data Protection Officer in place
	
	FOODAKAI 2.0 & FOODINSPECTOR:
	• Perform a diagnosis to identify which data is affected
	• Identify the vulnerability
	• Restore the correct data from a backup file
	• Inform the end user and the company for the data breach.

DATA SHARING AND REUSE OF DATA INTENDED FOR PUBLICATION

Organisation/labelling of Data for easy identification	**AGRIVI 2.0:** Not applicable. **FOODAKAI 2.0 & FOODINSPECTOR**: Unique identifiers for: • Companies • Recalls and border rejections • Products and hazard classification terms.
Data Sharing Requirements	**AGRIVI 2.0:** Subscription and User access is required for data sharing. **FOODAKAI 2.0 & FOODINSPECTOR:** Subscription is required. A

	data API is provided to get information of recalls, boarder rejections, lab tests, inspections, prices etc.
Audience for Reuse	**AGRIVI 2.0:** Food processing companies. **FOODAKAI 2.0 & FOODINSPECTOR:** Food companies, Research Centres, Commercial partners.
Restrictions on Re-Use of Data	**AGRIVI 2.0:** The non-personal data is not shared, can be re-used only by authorised third party systems or if approved by the user (farmer). **FOODAKAI 2.0 & Food Inspection:** The non-personal data that is processed and stored by Agroknow and will be used by the applications is not shared and can be re-used only by authorised third party systems (food companies, research centres and commercial).
Publication	**AGRIVI 2.0:** No data is published at the moment. **FOODAKAI 2.0 & FOODINSPECTOR:** No data is published right now.

DATA PRESERVATION AND ARCHIVING

Archiving of Data for Preservation and Long-term Access	**AGRIVI 2.0:** Cloud-based database clusters with 3-hour database backup policy. **FOODAKAI 2.0 & FOODINSPECTOR:** The processed data is stored on the private cloud and dedicated servers with daily back ups.
Data Retention (time-period)	**AGRIVI 2.0:** Data is kept for a maximum period of 5 years after a user has deactivated his Agrivi FMS account. **FOODAKAI 2.0 & FOODINSPECTOR:** The data will be retained at least until the end of 2025.
File Formats	**AGRIVI 2.0:** MariaDB and MongoDB databases.

	FOODAKAI 2.0 & FOODINSPECTOR: JSON, CSV, XML, HTML.
Data Archives	**AGRIVI 2.0:** Not applicable. **FOODAKAI 2.0 & FOODINSPECTOR:** In long term storage cloud components offered by commercial clouds and in backup files stored in Agroknow's dedicated servers.
Long-term Maintenance of Data	**AGRIVI 2.0:** • Data is maintained internally. • Customers have the option to request data removal. • Data is automatically purged after a period of 5 years after a user has deactivated his Agrivi FSM account. **FOODAKAI 2.0 & FOODINSPECTOR:** Agroknow has a process that ensures the long-term maintenance of the data that is collected, processed and stored by the FOODAKAI 2.0 and Inspector applications. Automatic daily back-ups of the data that is processed by Agroknow Big Data Platform and stored in the applications are performed. The backup process is monitored and in case of a failure, responsible data managers are notified. The backup files are stored in two different cloud infrastructure. There is a data restore process that can be activated when needed. In terms of systems, Agroknow is using the following systems: Backup tools that are offered by the cloud providers (Amazon, Heroku) Scripts developed by the technology team to back up data that is processed in our dedicated servers.

6.4 Management of Data that is not processed via TheFSM Applications.

As outlined in the previous section, most of the data collected or generated in the pilots will be processed through the three applications (AGRIVI 2.0, FOODAKAI and FOODINSPECTOR). However, some data such as consent forms and the results of the pilots will not be processed and managed on the applications. The following tables provide details regarding the management of these types of data in the context of TheFSM pilots. The table is organised in accordance with the FAIR principles.

Table 20: FAIR Lifecycle of Data not processed via TheFSM Applications.

	DATA PRODUCTION AND STORAGE
Data Generated/Collected	The consent of the Pilot participants forms the legal basis for the processing of personal data in accordance with Article 6(1)(a) of the GDPR. • Participants contact data, including personal data such as emails, phone numbers, names and job descriptions. • Participants consent forms . • Anonymous answers to questionnaires. • Results of the pilots.
Data Format	PDF, Google Docs, EXCEL, CVS.
Data Size	5 - 100 Mb.
Software tools for creating/processing /visualizing data	Google Forms - Used to conduct and visualise questionnaires. The questionnaires will be completed anonymously by participants who take part in the pilots. Participants consent forms and deliverables containing the results of the pilots can be visualised online through the Project Google Drive Repository.
Storage and Backup Strategy	Where data is processed on the AGRIVI 2.0, FOODAKAI and FOODINSPECTOR Applications, the storage and backup strategies indicated in Table 19 will apply. Patients consent forms - Stored in the collaborative workspace of TheFSM Google Drive repository. Questionnaires - Stored via Google Forms in the collaborative workspace of TheFSM Google Drive repository. Google backup strategy is applicable.
	DATA ACCESS

Risks to Data	• Loss or destruction of data; • Unauthorised alteration, transmission and storage of data; • Loss of confidentiality; • Loss or destruction of data.
Risk Management	Where data is processed on the AGRIVI 2.0, FOODAKAI and FOODINSPECTOR Applications, the risk management strategies of these applications will be applied (more information contained in Table 19). Google Drive Workspace risk management measures will apply to the Participants Consent Forms and the anonymous questionnaires. Data is protected by password controls and other security protocols in accordance with Google's terms of use. These measures include 256-bit SSL/TLS encryption for files during transmission and 128-bit AES keys for files during storage. Thus protecting documents on the Repository from possible external damaging, voluntary attacks, deletion and modification. The risk of data loss is managed in the Google Drive Workspace as documents are not immediately deleted. Documents are moved to the Google bin and automatically deleted only after 30 days. Furthermore, the Project coordination team can recover deleted or lost documents within 25 days after the bin has been automatically emptied.
Data Access & Access Requirements	Access to the project Google Drive repository and its contents is limited to partners within TheFSM Consortium. Data Access is governed by user and password controls implemented in accordance with Google's terms of use.
Correct execution of the access process	The project coordinator is in charge of the correct execution of the access process. Access to the project Google Drive repository is limited to partners of TheFSM consortium.
Procedure to address the possibility of a data breach	Security of documents stored through Google Workspace Business purchased for InteropEHRate is granted by the Google policy for data security and management of data incidents. Google specifies that specific mitigation actions are put in place in a precise process to address any potential incidents affecting the confidentiality, integrity, or availability of customers' data.

DATA SHARING AND REUSE OF DATA INTENDED FOR PUBLICATION

Data Sharing Requirements	Public deliverables containing the results of the pilots are openly accessible on the project websites (https://foodsafetymarket.eu/).
Audience for Reuse	To further develop TheFSM platform, technical partners Agroknow and Agrivi will use the results of the pilots and the questionnaires. The public deliverables containing the results of the pilots will also be beneficial for a variety of people, including researchers and actors in the food safety market (farmers, producers, retailers, public authority bodies etc.).
Restrictions on Re-Use of Data	Personal data and business sensitive data of the participants will not be shared or re-used.
Publication	The results of the pilots will be published in public deliverables on the project website (https://foodsafetymarket.eu/) and in scientific journals.

DATA PRESERVATION AND ARCHIVING

Archiving of Data for Preservation and Long-term Access	The results obtained in the pilots will be archived in the project folders in the Google Drive of the project until the end of the project.
Data Retention (time-period)	Participants consent forms and questionnaires will be retained until the end of the project.
File Formats	Pdf, cvs, excel, Microsoft form.
Data Archives	PDF, Google Docs, EXCEL, CVS.
Long-term Maintenance of Data	The deliverables containing the results of the pilots will be archived for five years after the end of the project.

6.5 Data Protection and Ethical Aspects

6.5.1 Informed Consent

In TheFSM, consent forms the legal basis for the initial participation in the pilots as well as for processing of personal data. Article 4(11) GDPR defines consent as:

Freely given, specific, informed and unambiguous indication of the data subject's wishes by which he or she, by a statement or by a clear affirmative action, signifies agreement to the processing of personal data relating to him or her.

Prior to taking part in the pilots, participants are required to give their informed consent. The consent of participants will be sought through electronic consent forms with corresponding information sheets. As part of its duties under Work Package 6, UNIVIE will draft the consent forms before the pilots commence in Q4 of 2021.

The following information is included in the informed consent form, which is given to participants:

- The aims and objectives of the project, the pilot study and TheFSM applications;
- The procedures and processes to be followed in the pilot study;
- Purpose of processing personal data which in this case is for scientific research;
- Types of data to be collected and processed. This includes personal data such as contact information.
- Procedure to use for data processing and processing activities;
- Names and contact information of all Data Controllers and Joint Controllers;
- Rights of the data subject in accordance with Article 12 - 21 of the GDPR;
- Information on how data subjects may exercise their right by contacting the Pilot Support Team and the Pilot Leader. Table 2, 9 and 14 in this document contain more information on the Support Teams and respective roles;
- Name and contact details of the Pilot Leader and Support Team;
- Personal data storage periods;
- Dissemination of the results derived from the study.

Participants will be given the opportunity to consult with the Pilot Leaders and Support Team regarding any questions, this process and the role of the Support Team is explained further in the Pilot Support Plan (section 3.1.3, 4.1.3 and 5.1.3). Only after making sure that participants have fully understood all information pertaining to their participation in the pilots, the Pilot Leader will seek for the written consent to include the participants in the project.

6.5.2 Joint Controllership

All partners who jointly determine the purpose and means of processing in the context of TheFSM pilots will be considered as joint controllers. In accordance with Article 26 GDPR, Joint controllers will sign a written Joint Controllership Agreement prior to the processing of personal data and the commencement of the pilots. The Joint Controllership Agreement shall determine the roles and responsibilities of each controller and ensure compliance with the obligations of the GDPR. The essence of this agreement shall be made known to the data subjects in the information sheet [Article 26(2)]. In the context of TheFSM Pilots, the following partners are Joint Controllers: AGROKNOW, AGRIVI, WFSR, Valoritalia, TÜV AU Hellas, TÜV AU Romania and TÜV AU Cyprus. Prior to the commencement of the Pilots in Q4 of 2021, the Joint Controllership shall be drafted by UNIVIE and thereafter reviewed and signed by all Joint Controllers.

6.5.3 Pilots taking place in Third (non-EU) Countries

During the validation phase of the project, pilots will take place in the Hashemite Kingdom of Jordan and the Arab Republic of Egypt. During these pilots, Pilot Partners will process the personal data of local (non-EU) companies and participants. Therefore, personal data of data subjects within the EU will not be transferred to third countries (Article 44, GDPR). Furthermore, personal data of non-EU data subjects will not be transferred to the EU, all data transferred to the EU will be anonymised. The consent of participants will form the legal basis for all activities relating to the processing of personal data.

The processing of personal data in Jordan and Egypt will be governed by the principles and provisions of the GDPR. In accordance with Article 3(1), the GDPR "applies to the processing of

personal data in the context of the activities of an establishment of a controller or a processor in the Union, regardless of whether the processing takes place in the Union or not". Furthermore, applicable international treaties, standards and national legislation will govern personal data processing. Jordan and Egypt are signatories to a number of international treaties and declarations relating to data protection and privacy. The signed international treaties and declarations include but are not limited to the following:

- The Universal Declaration of Human Rights;
- The International Covenant on Economic, Social and Cultural Rights;
- The International Covenant on Civil and Political Rights.

On a national level, in Egypt the applicable law on the protection of personal data is contained in Resolution No. 151 of 2020 ('The Data Protection Law') (English translation of the law is available here). In Jordan, the right to privacy is enshrined in Article 7 of the Constitution of Jordan. Jordan does not currently have a general data protection law enacted; however, in 2014 the Ministry of Digital Economy and Entrepreneurship submitted a draft data protection bill incorporating the principles of the GDPR.

6.5.4 Obtain Feedback

Sources of Feedback

The primary source of feedback will be the pilot participants (potential users of TheFSM applications), which in the case of FOODINSPECTOR is a group of individuals with a wide variety of occupations, computer skills and experiences. Because of the variety in the kind of user, it is important to collect the following information:

- Background information on the participants.
- System Usability Scale.
- The evaluation of FOODINSPECTOR application.

For these information the following questionnaires will be used.

- Background information on the participants.

- System Usability Scale.
- The evaluation of FOODINSPECTOR application.

Incident-tracking System

As mentioned above, the participants will be able to report any problems they encounter when using the FOODINSPECTOR application using an incident-tracking system implemented as an alerting module of FOODINSPECTOR.

Metrics on Task Performance

The pilot participants will perform certain tasks with FOODINSPECTOR. During these tasks their performance will be measured. The following metrics will be analyzed when participants are given a timed task:

- Number of errors
- Percentage of the task completed successfully
- Number of hints/prompts needed to complete the task
- Time to complete the task
- Major problems/obstacles associated with each task

Storage of Feedback

The results from the questionnaires and the reported problems will be stored in Excel in the google drive of TheFSM project.

Analyse Feedback

After having collected and stored the feedback, the next step is to analyze it. The underlying goal here is to transform the feedback into the metrics and standards used to assess the usability of FOODINSPECTOR and the objectives of the pilot.

Report Findings

Directly after the pilot a first preliminary analysis will be conducted that gives insight into the larger trends and patterns. This analysis will take place in the days following the end of the pilot

and results will be sent to the relevant people after at maximum 3 days. The goal here is to identify hot spots (worst problems) that have to be fixed and communicate these (and only these) findings to the development team so they can work on these issues immediately without having to wait for the final report.

6.5.5 The Next Step

After the feedback has been collected and analyzed, there will be sufficient information to evaluate whether the delivered design meets the design specification, as well as the business requirements. Depending on how well the pilot meets the success criteria, there are a number of strategies that can be employed at this point in the pilot deployment:

- Stagger the pilot forward. If the pilot was deemed partially successful, deploy the pilot to the next pilot group or, if your team has planned to conduct multiple pilots, proceed with the next pilot.
- Roll back the pilot. When the pilot is not completely successful, it is often necessary to roll it back so that issues can then be resolved.
- Patch the pilot and continue. If the pilot is not successful, but the issues raised are easily fixed, issue the same pilot group a “patch,” a fix to existing code.

7 APPENDIX

Appendix A: Invitation email to fill in the SUS questionnaire

Dear <name user>,

Are you enjoying the FOODAKAI 2.0/ AGRIVI 2.0/ FOODINSPECTOR application? Or is there anything we can do to improve your experience?

We would be grateful if you could spare 10 minutes of your time to answer a short survey and let us know if FOODAKAI 2.0/ AGRIVI 2.0/ FOODINSPECTOR actually benefits you and how we can improve further.

Here is the link to the survey.

Thank you

<Signature>

Appendix B: Reminder to fill in questionnaire

Dear <name user>,

Two weeks ago you received an email to fill in a short survey about the FOODAKAI 2.0/ AGRIVI 2.0/ FOODINSPECTOR application.

Because we have not yet received your answer, we would like to remind you.

We would be grateful if you could spare 10 minutes of your time to answer a short survey and let us know if the FOODAKAI 2.0/ AGRIVI 2.0/ FOODINSPECTOR application actually benefits you and how we can improve further.

Here is the link to the survey.

Thank you

<Signature>

Appendix C: Instruction email on how to report problems

Dear <name user>,

In the coming period you will be using FOODAKAI 2.0/ AGRIVI 2.0/ FOODINSPECTOR. In order to find out if FOODAKAI 2.0/ AGRIVI 2.0/ FOODINSPECTOR actually benefits you and how we can improve further, we would like to encourage you to report any problem you may encounter during this time. These reported problems will be carefully analyzed by the development team in order to make improvements to the FOODAKAI 2.0/ AGRIVI 2.0/ FOODINSPECTOR application.

Problems can be reported by going to this link.

Please try to be precise in your descriptions. Screenshots are usually very helpful too!

Try to report one problem at a time. We would like to encourage you to report all problems you encounter, including minor ones.

Thank you

<Signature>

Appendix D: Data Management Plan Questionnaire

Instructions

Due Date: 11 June 2021

This questionnaire concerns data collected, processed and generated in TheFSM Pilots. The following questions are directed at Consortium Partners who are involved in organising and conducting the pilots at the different pilot sites. Please note the questions addresses all data types or categories of data collected, processed and generated during the pilot and validation phase (including personal and non-personal data). If the answer is "none" or "not applicable" please state and provide a brief explanation of why the question does not apply to you. Please consult with your Data Protection Officers (DPO) and Legal Representatives where necessary.

1. General Questions

A. The following questions are on behalf of?
- AGRIVI
- TÜV AU Hellas
- TÜV AU Romania
- TÜV AU Cyprus
- Valoritalia
- WFSR

B. Which Pilot are you involved in?
- Pilot 1 - Greece
- Pilot 2 - Netherlands
- Pilot 3 - Italy
- Pilot 4 - Romania
- Pilot 5 - Croatia
- Pilot 6 - Hungary
- Pilot 7 - Poland
- Pilot 8 - Cyprus
- Pilot 9 - Egypt
- Pilot 10 - Jordan

C. Which applications will be tested in your Pilot?
- FOODINSPECTOR
- AGRIVI 2.0

- FOODAKAI

D. What aspects/functionalities of the applications will be tested at your specific Pilot location?

E. Which Business Scenario will be tested in your Pilot?
- Scenario 1 - The Retailer
- Scenario 2 - Food Processing
- Scenario 3 - Private Food Safety Standards Certification
- Scenario 4 - Organic Certification: The Certifier
- Scenario 5 - Dutch Food Safety Authority (NVWA) inspection/Dutch broiler meat supply chain.

F. What aims/objectives do you seek to achieve at your specific Pilot location.

2. Data Processing at Pilot Sites

A. Who (or which entity) at the pilot site, will be responsible for determining what data is collected and produced?

B. The data collected is:
- Dummy/fake data
- Real Data

C. Please describe the process of collection of data on the pilot site.

D. What type of non-personal data will be collected at the pilot site? (eg: Farm data, certification data, etc).

E. What type of personal data will be collected? (eg: participants contact information etc.).

F. In which format will the data be collected? (eg: pdf, cvs, excel etc).

G. What is the estimated size of data to be collected? (Please provide your answer in Mb).

H. For each data type mentioned in the previous questions, what is the purpose of data collection? (eg: contact data is collected for the purpose of communicating with the participants).

I. Besides FOODINSPECTOR, Agrivi and Foodakai, what other software tools will be used for creating/processing/visualizing data?

J. Will you use pre-existing data?
- Yes
- No
- Uncertain

K. If yes, please specify what pre-existing data will be used.

L. What storage and backup strategies will be adopted?

M. Will you use any other source besides the data generated on the pilot site? (eg: pre-existing private database, public database, …).

3. Data Access

A. What are the major risks to data collected/produced at pilot sites?
- Loss or destruction of data
- Loss of availability
- Loss of integrity
- Loss of confidentiality
- Data breach
- Unauthorised alteration transmission and storage of data.

B. Please specify any other major risks to data collected/produced at pilot sites?

C. Have you prepared a formal risk assessment addressing each of the major risks to data security and potential solutions?
- Yes
- No
- Uncertain

D. If yes, please provide further information. If no/uncertain, please explain why.

E. Does your data have any access concerns?
- Yes
- No
- Certain

F. Describe the process someone would take to access data collected/produced at pilot sites?

G. Who checks the correct execution of the access process?

H. If data is confidential (e.g. personal data not already in the public domain, confidential business information or trade secrets), are there any appropriate security measures in place or any formal standards that you have to comply with (e.g ISO norms)?

4. Data Sharing and Re-Use

A. Who is authorised to access data produced on the pilot side?

B. Will data produced/generated at pilot sites be made re-usable or openly accessible?
- Yes
- No
- Uncertain

C. Will the data produced/generated be reproducible (able to be copied)?
- Yes
- No
- Uncertain

D. If so, how will you organize/label the data so that researchers may easily isolate fields of interest in their study?

E. Any data sharing requirements? (e.g., funder data sharing policies often require that the digital data be released in machine-readable formats that supplement journal articles and presentations).

F. Audience for reuse? Who will use it now? Who will use it later?

G. Any restrictions on who can re-use the data and for what purposes?

H. When will you publish it and where?

5. Data Preservation and Archiving

A. How will data produced at the pilot sites be preserved from long-term access?

B. How long should the data be retained?

6. Data Protection and Ethical Aspects

A. Are you relying on participant's consent (as legal basis) for processing the data at the Pilot site?

B. If your legal basis is not consent, please provide the legal basis and national legislation that you are relying on.

C. How will you protect the identity of Pilot's participants and any other personal data which is processed?

- Pseudonymisation
- Anonymisation
- Encryption
- Restricting Data Access
- Minimising the amount of personal identification data collected

D. Please include any other applicable measures.

E. Do you have any other legal concerns regarding the processing of the relevant data?

7. National Legislation for Pilots outside of the EU

A. Please provide information regarding local data protection laws including links and translations where possible.

B. Will data be transferred outside of the EU in order to conduct the pilot?

- Yes
- No
- Uncertain

C. If yes, what technical and legal safeguards (e.g. standard contractual clauses for transferring personal data to non-EU countries) will be put in place?

D. Will data collected and produced/generated be transferred back into the EU?

- Yes
- No

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