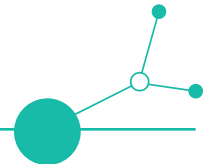


D.2.1.1

Report on SMERF Diagnosis selfassessment functionality and expert system development



Version 1
03 2025





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1. Executive summary

The SMERF Diagnostic Self-Assessment Tool and Expert System, detailed in this deliverable, outlines the updated methodology and functionalities developed to enhance SME transformation assessment within the SMERF project framework. This document highlights key improvements, new logic implementations, backend enhancements, and rigorous compliance measures to ensure the effective and secure operation of the diagnostic platform.

The refined logic introduced in this deliverable significantly improves accuracy and relevance in mapping SMEs' self-assessment responses directly to tailored recommendations, structured into three distinct categories: Training, Expert Consultation, and Mentoring. This structure supports a granular and targeted identification of activities, enabling SMEs to precisely address identified gaps within each transformation pillar—Innovation Culture, Digital Manufacturing, Open Innovation and Sharing Economy, and Circular Economy and Sustainability.

The tool operates through a multi-step process that first assigns "Traffic Light" indicators (red, yellow, green) to evaluate SME performance at the Feature and Pillar levels, reflecting varying degrees of readiness and pinpointing critical areas for improvement. Subsequently, the logic identifies specific responses that substantially lower overall performance scores, automatically triggering relevant recommended activities to address the underlying causes of performance deficits.

Additionally, significant backend improvements were introduced to ensure efficient administration, management, and adaptability of the self-assessment tool. The role-based access control ensures secure data handling, assigning specific user roles—Admin, Manager, Pillar Leader, and Standard User—each with clearly defined permissions to safeguard data integrity and comply with GDPR requirements.

Comprehensive GDPR compliance analysis confirms stringent adherence to data minimization, purpose limitation, security standards, and data retention policies. Users have clear rights regarding access, rectification, erasure, and restriction of personal data, ensuring transparency and user control. The robust security infrastructure incorporates professional hosting solutions and secure development practices to maintain the highest levels of data protection.

Conclusively, this deliverable represents a strategically advanced, user-oriented tool that leverages sophisticated logic, clear activity mappings, and secure backend operations to facilitate targeted support for SMEs pursuing transformational objectives within the SMERF project.



2. Tool's Rules

2.1. User Roles and Permissions

The tool incorporates role-based access control, to assign different levels of permissions based on user roles. This ensures that each user has access only to the functionalities necessary for their role, preventing unauthorized modifications and maintaining data security. The tool defines four distinct user roles: Admin, Manager, Pillar Leader, and Standard User. Each of these roles has specific permissions and access levels, ensuring structured and controlled interactions within the system.

The Admin role is exclusively held by INCODE, the company responsible for developing the software. Admins have full access to all features, including:

- Managing user accounts, including assigning and revoking roles. They ensure that only authorized personnel can access different parts of the system and can adjust permissions as needed.
- Modifying backend settings and updating system configurations to maintain system stability and enhance performance. Admins have complete control over the system infrastructure.
- Accessing system logs for auditing and tracking user activity. This allows them to monitor actions taken by other users and detect any suspicious activities.
- Ensuring system integrity and maintaining security protocols to protect the platform from potential threats. They are responsible for implementing measures to prevent unauthorized data breaches.
- Overseeing the correct functioning of the platform and handling troubleshooting. Admins address technical issues that may arise to ensure smooth operation.
- Controlling all user permissions, restricting or granting access as needed to prevent unauthorized access to sensitive data.
- Managing questionnaire structures and processing updates, ensuring that the tool's functionalities remain up to date and aligned with project objectives.

Managers and Pillar Leaders have similar privileges within the backend. Their capabilities include:

- Downloading the list of registered users, including company names and registration emails (but not passwords). This allows them to keep track of active users and verify registration details.
- Access the company profile questionnaires linked to each user, ensuring a comprehensive view of the business context associated with registered accounts.
- Viewing the results of questionnaires submitted by other users. They can analyze the data to assess company performance and generate insights for further improvements.
- Analyzing questionnaire data, reviewing responses, and generating reports. These reports provide valuable insights into business transformation progress and areas requiring attention.
- Monitoring the performance of different companies using the tool. Managers and Pillar Leaders can assess trends, identify areas for improvement, and tailor recommendations accordingly.
- Managing and modifying backend data relevant to their assigned roles. They have the ability to update system data and make necessary adjustments based on user feedback.



- Pillar Leaders focus specifically on questionnaire analysis, ensuring that responses align with the project framework, while Managers oversee broader system functionalities, including administrative operations.

Standard Users must register using an email and password. Upon registration, they receive a confirmation email to authenticate their account. Before gaining full access, they are required to complete a company profile questionnaire. Their permissions are more restricted and include:

- Viewing and managing only their own submitted questionnaires, ensuring privacy and individualized access to data.
- Having only one active questionnaire at a time, which prevents multiple incomplete assessments and ensures streamlined data collection.
- Reviewing, tracking progress, and deleting past submitted questionnaires to maintain an organized record of their self-assessments.
- Ensuring that their submitted information remains accurate over time by making necessary updates whenever required.
- Updating personal and company profile details when necessary to reflect changes in organizational data and maintain the relevance of stored information.

2.2. Authentication and Security Measures

User authentication requires all users to register with a valid email and password. A confirmation email is sent to verify the registration before access is granted. This verification process ensures that only legitimate users can access the platform. Upon first login, users are required to complete a company profile questionnaire to finalize their registration process, providing essential information for personalized assessment.

Once registered, users can securely log in and interact with the tool while maintaining controlled access based on their assigned role. The authentication process ensures that only authorized users can access sensitive data, preserving the confidentiality and integrity of the system. Password protection mechanisms help prevent unauthorized access, and users are encouraged to maintain strong credentials to enhance security.

2.3. Data Access and Modification Restrictions

Access to data is strictly regulated based on user roles. Standard Users can only access their own questionnaire results, ensuring privacy and confidentiality. They do not have permission to view other users' assessments, safeguarding individual data integrity. Admins, having full system-wide access, can oversee and manage all user data, ensuring compliance with established security policies. Managers and Pillar Leaders can download the list of registered users, including company names and emails, and view questionnaire results of other users, but they do not have access to passwords, maintaining a layer of security.

Data modification permissions are also role-dependent:

- Admins can modify system-wide settings, update the tool's configuration, and manage all user accounts. Their ability to make broad changes ensures that the platform remains functional and adaptable to evolving requirements.
- Managers can access certain backend functionalities and oversee questionnaire-related activities. They can monitor trends and identify patterns in the responses submitted by users.



- Pillar Leaders can analyze and manage questionnaire data but cannot modify system configurations. Their focus is primarily on assessment evaluations and ensuring that collected data aligns with project goals.
- Standard Users can delete their own submitted questionnaires but cannot modify or access others' data. This guarantees personal data control while preventing unauthorized alterations of external responses.

Sensitive company and personal data are accessible only to authorized roles. Data retention policies ensure that information is either deleted or anonymized after a predefined period, maintaining compliance with data protection regulations. No unauthorized data export or external sharing is permitted. Admins enforce strict compliance with data handling protocols, ensuring that user information remains protected within the tool at all times. The combination of these access control measures ensures a structured and secure data management approach, preserving both system functionality and user privacy.

2.4. GDPR Compliance Analysis

2.4.1. Data Collection and Processing

The SMERF Diagnostic Tool collects and processes personal data in accordance with the General Data Protection Regulation (GDPR). The data collection process is structured and transparent, ensuring that users are informed about how their data is used. The tool gathers identification data, such as first name, last name, job title, and company name, along with contact information like email address. Additionally, it records usage data, including interactions with the tool, login times, activity logs, and questionnaire responses.

The Terms & Conditions and Privacy Policy texts are integrally presented in Appendix A, sections 4.1 and 4.2, as well as in a dedicated section of the self-assessment Tool.

The collected data serves multiple purposes:

- Ensuring access to the SMERF Diagnostic Tool, allowing users to fully benefit from its functionalities.
- Analyzing SME responses to provide tailored recommendations, including training programs, mentoring opportunities, and expert consultations.
- Supporting users with inquiries and technical assistance to improve their experience and ensure smooth interactions with the tool.
- Refining functionalities and improving user experience based on collected data, ensuring that the tool evolves according to user needs and feedback.

To comply with GDPR, users must provide informed consent before submitting their data. This ensures that individuals understand the extent and purpose of data collection. Processing activities follow principles of transparency, purpose limitation, and data minimization, with structured processing. These principles align with GDPR's core requirements of ensuring that individuals are aware of how their data is collected, limiting processing to necessary purposes, and safeguarding personal data through strict operational protocols to prevent unauthorized access or misuse.

2.4.2. Legal Basis for Data Processing

The processing of personal data within the SMERF Diagnostic Tool is grounded in different legal bases under GDPR. The primary justification is the performance of a contract, as users voluntarily register to access the tool and receive recommendations based on their inputs. Additionally, legitimate interests support



processing for improving service offerings, generating insights, and advancing SME digital transformation, which is a core objective of the SMERF project. Furthermore, consent is obtained from users upon registration, ensuring they are fully aware of the data processing activities involved.

To ensure compliance, the SMERF Diagnostic Tool (SDT) provides a clear privacy policy for registration, allowing users to understand how their data will be used. This approach is in line with GDPR's emphasis on transparency and user control, ensuring that users are not unknowingly subjected to data processing. Users also have the right to withdraw consent at any time, reinforcing their autonomy over personal data. Importantly, the tool does not process special categories of data, thereby avoiding high-risk processing as outlined in GDPR's provisions regarding sensitive personal information, such as health or biometric data.

2.4.3. Data Minimization and Retention Policies

SMERF SDT adheres to the principle of data minimization, ensuring that only essential information is collected to support assessment and recommendations. The questionnaire has been carefully designed to eliminate redundant questions and features, focusing on data that provides meaningful insights.

Personal data is retained only for the duration necessary to fulfil its intended purpose, with a maximum retention period of five years after the conclusion of the SMERF project. Users have full control over their data and may request anonymization or deletion at any time. Additionally, any data used for research or development is fully anonymized, ensuring that individual identities cannot be reconstructed. This anonymized data may also contribute to the writing of scientific articles, reinforcing GDPR's principle of data protection by design and by default, where privacy measures are integrated into the entire data lifecycle.

These measures ensure that data is not retained beyond its necessity, adhering to GDPR's storage limitation principle and preventing excessive or unnecessary storage of personal information.

2.4.4. User Rights and Consent Management

Under GDPR, users have specific rights concerning their personal data. SMERF ensures that these rights are respected and easily accessible within the tool's system:

- Right to Access - Users can request and obtain a copy of their data, ensuring transparency regarding what information is stored.
- Right to Rectification - If any information is incorrect or incomplete, users can request modifications to maintain accuracy and reliability.
- Right to Erasure - Users can request the deletion of their data unless legal obligations prevent it, ensuring that their information is not stored indefinitely without justification.
- Right to Restriction - Users may limit the ways in which their data is processed, giving them control over how their personal information is utilized.

2.4.5. Security and Infrastructure Considerations

The SDT is hosted on third-party professional servers, ensuring a high level of security and reliability. By leveraging professional hosting services, the tool benefits from robust security protocols designed specifically for enterprise-level applications. These security measures include continuous monitoring, firewall protection, and data encryption, reducing the risk of unauthorized access or breaches.

Additionally, the tool has been developed by a professional software house that adheres to industry best practices for secure application development. This includes the implementation of secure coding standards, regular security audits, and the use of up-to-date development frameworks that incorporate built-in protections against common cybersecurity threats. The combination of professional hosting services and



development methodologies ensures that SDT complies with GDPR's requirement to implement technical and organizational measures that safeguard user data.

By relying on third-party infrastructure and professional development tools, SMERF ensures that user data is managed within a secure, scalable, and resilient environment, aligning with GDPR's principles of security by design and by default.

3. Tool's improvements

3.1. New tool's logic

In this updated approach, we refined the methodology presented in our previous deliverable (D.1.3.1) by clarifying how the tool's logic functions within the SMERF context and by detailing the rationale behind each adjustment. Unlike the earlier version of the methodology, our new logic considers a more flexible approach to linking questions and answers to specific Activities, and it also integrates a straightforward mechanism to calculate and interpret results. Ultimately, the objective is to offer Small and Medium-sized Enterprises (SMEs) an even more precise set of recommendations.

The modified approach has been designed by partners, after a first round of testing among the Consortium. By involving other partners' employees, not directly linked to the tool development, a new possible methodology has been sketched and refined.

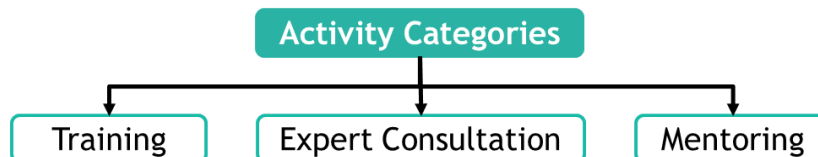


Figure 1: Activities' Categories

Additionally, in response to ongoing discussions and lessons learned from pilot experiences, we decided to collect a broader set of company-specific information from each SME through an anagraphic form. This set of data allows us to better classify and eventually select 20 companies to receive various forms of training and support, ensuring that the process remains tailored.

Our revised plan proposes categorizing all Activities into three overarching groups—Training, Expert Consultation, and Mentoring. These three categories capture the central types of support available, and they will be used by the Expert System to guide companies toward the most suitable solutions, summarized in a personalized transformation scenario.

Below, we provide an overview of the step-by-step logic that calculates the tool's outputs.

3.1.1. Step 1

The first step of the new methodology focuses on linking the questions from our self-assessment tool directly to individual Activities, as represented in Figure 2. Each question's possible answers are meticulously associated with an Activity, which also belongs to one of the three categories outlined above. By creating this direct connection, the system can deliver far more targeted suggestions. For instance, if a participant selects a specific answer to a question on ecosystem mapping or external partnerships, the tool will



automatically recommend an Activity that addresses these needs—be it a targeted training module, a consultation with specialized experts, or a mentoring program with peer organizations.

This mechanism represents a shift from the earlier approach in which some Activities were only tangentially connected to features or results. In the new logic, every key question or answer choice clearly corresponds to a recommended action. This method reduces potential ambiguity, ensures immediate relevance, and encourages participants to see obvious links between their self-assessment responses and the recommended measures.

Illustration of this mapping might be as follows:

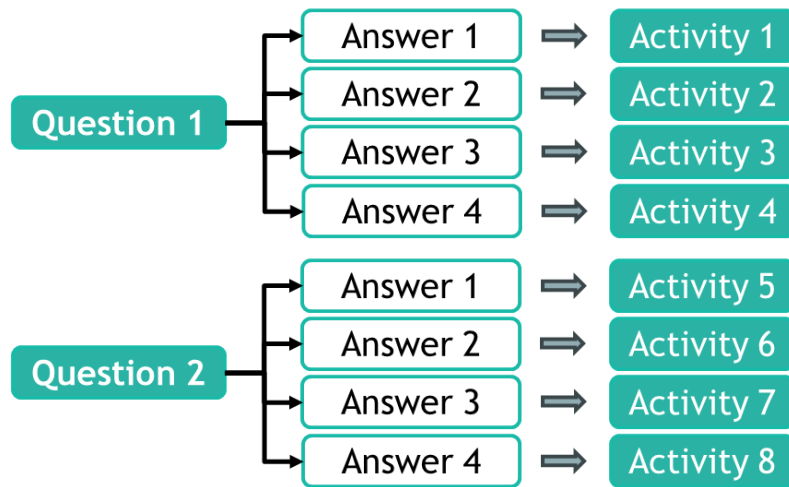


Figure 2: Link between Questions, Answers and Activities

By incorporating these direct relationships, SMEs can confidently view the recommended Activities as tailored to their actual performance gaps.

3.1.2. Step 2

In the second step, we revisit and partially reuse the original concept of “Traffic Lights.” As described in D.1.3.1, these “Traffic Lights” serve as color-coded indicators—red, yellow, and green—that capture how a company is performing under a specific Feature.

Score: $Score(Feature_i) = \sum_j Q_{questionj}$

Traffic Light (TL): $\begin{cases} Max(F_i) = \sum_j w_j \\ TL(F_i) = \frac{Score(F_i)}{Max(F_i)} \end{cases}$

We maintained that system but integrated it more closely with the new question-based Activity mapping.

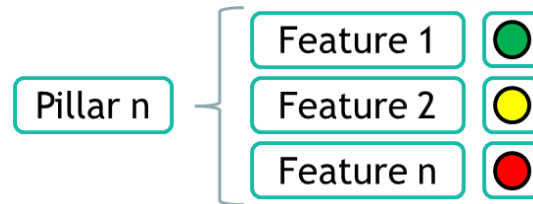


Figure 3: Relation between Pillars, Features, and Traffic Lights

As shown in Figure 3, each Feature for every Pillar is evaluated according to how users score on a series of questions. Their answers, each bearing a certain point value, are summed and normalized. Based on these aggregated scores, a color is assigned as at-a-glance indicator:

- Red: The Feature is performing at a relatively low level and may need urgent attention.
- Yellow: The Feature is at a moderate or developing level, reflecting some strengths but also room for improvement.
- Green: The Feature is at a high or advanced level, indicating robust performance and potential to become a best-practice area.

Applying these Traffic Lights for each Feature provides a simple but effective way to show where the SME stands within each pillar. The color assignments are also used to keep the results comprehensible for business owners, managers, and staff members, reducing excessive technicalities.

3.1.3. Step 3

Step 3 builds upon the color-coded evaluation by identifying which specific question(s) have the strongest negative effect on a Feature’s final score. In other words, if a Feature is red or leaning toward red, the system pinpoints the precise question(s) that influenced the drop.

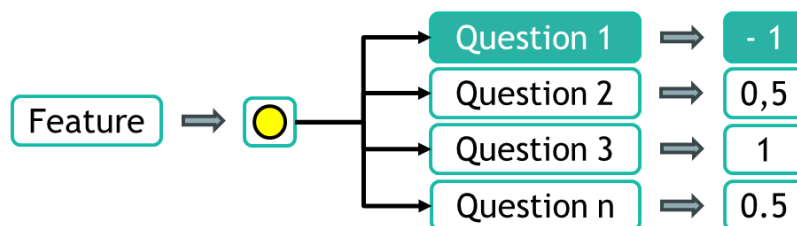


Figure 4: Question's score and Activity trigger

This process involves systematically analyzing all questions tied to a single Feature and detecting the one(s) that received the lowest response values, as shown in Figure 4. Pinpointing these lower scores highlights the exact issues SMEs might want to remedy first.

After these questions are identified, the system re-checks the recommended Activities mapped in Step 1. This helps generate precise outputs for the Expert System, allowing it to propose an accurate intervention strategy.

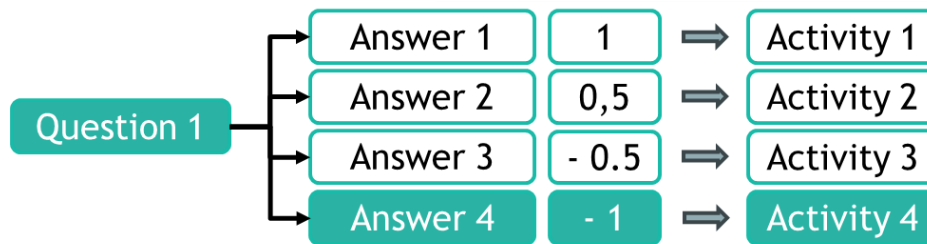


Figure 5: The systems looks for the answer that lowered the most the Feature

In practice, as per Figure 5:

1. The relevant question is singled out.
2. The system looks up which answer was selected.
3. The system references the Activities assigned to that answer.
4. The final output suggests one or multiple Activities that specifically address the identified gap.

By adopting this targeted approach, the logic ensures that organizations address root causes rather than generalities, maximizing the impact of the recommended Activities.

A practical example to this approach is given in Appendix A, section 4.3.

3.1.4. Step 4

In Step 4, the tool aggregates the Traffic Light color for each Feature within a particular Pillar to define an overall Pillar color. By calculating, for instance, an average or weighted average of Pillar Features, we can quickly communicate how the SME performs in that broad theme—be it Innovation, Digital Manufacturing, Open Innovation and Sharing Economy, or Circular Economy and Sustainability.

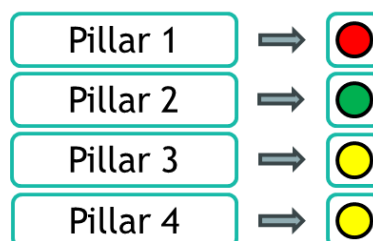


Figure 6: Pillars Traffic Light color example

If, for example, a Pillar’s Features are primarily red or yellow, the entire Pillar might also receive a red or yellow classification. Conversely, if most Features are consistently green, the Pillar is evaluated as green in its entirety, indicating a healthy or advanced performance level. This color-coded Pillar summary is essential not only for presenting the results to SMEs in a digestible format, but also for enabling the introduction of more general, cross-functional resources such as related webinars, industry best practices, and interviews.

At a high level, Step 4 integrates the new logic of direct question-to-Activity mapping and the adapted Traffic Light system to derive a final, consolidated viewpoint. This helps participants see both the micro



(question-by-question) and macro (pillar-wide) pictures and fosters a sense of cohesion when implementing the recommended solutions.

3.2. Tool's output

In the following sections, we will present the outputs of Step 1 and Step 2 of the SDT. The aim is to highlight how the system offers an initial overview of the company's performance in Step 1 and then, in Step 2, provides more in-depth recommendations for improvement.

3.2.1. Step 1 output

Within the SMERF self-assessment process, Step 1 provides users with an initial, high-level overview of their performance across the relevant transformation pillars (e.g., Innovation Culture, Digital Manufacturing, Open Innovation and Sharing Economy, and Circular Economy and Sustainability). This step is designed to be quick and accessible, offering an immediate perspective on the company's strengths and areas that may require further attention. Before finalizing Step 1, users are presented with a summary of their answers, allowing them to review and make any necessary modifications to ensure accuracy.

3.2.1.1. Key Components

- **Feature Highlight:** The system selects a subset of features to showcase strengths and weaknesses:
 - Green (High Score): Typically, two features that demonstrate strong performance.
 - Yellow (Medium Score): Typically, up to two features indicating moderate progress or partial readiness.
 - Red (Low Score): Typically, up to two features representing the most critical gaps or risks.
- **Contextual Observations:** In a concise narrative, the report pinpoints the specific aspects that underpin each color category, offering brief explanations or potential reasons behind the scores.
- **Suggested Next Steps:** Although detailed activities, training, and consulting plans are more thoroughly addressed in Step 2, the output from Step 1 introduces the necessity of further investigation or deeper assessment of the pillars with lower scores.

3.2.1.2. Graphical Representation

A key part of the output is a graphical summary illustrating how the company performed across the selected features of each pillar. This visual format often includes:

- Radar charts that provide a clear, at-a-glance understanding of how scores are distributed, as shown in **Errore. L'origine riferimento non è stata trovata.**
- A scale that converts raw scores into a 0-10 range, simplifying interpretation and maintaining consistency across different features and pillars.

Such a graphical representation allows decision-makers to quickly identify areas of relative strength (the pillars/features with higher scores) and areas that may benefit from additional focus.

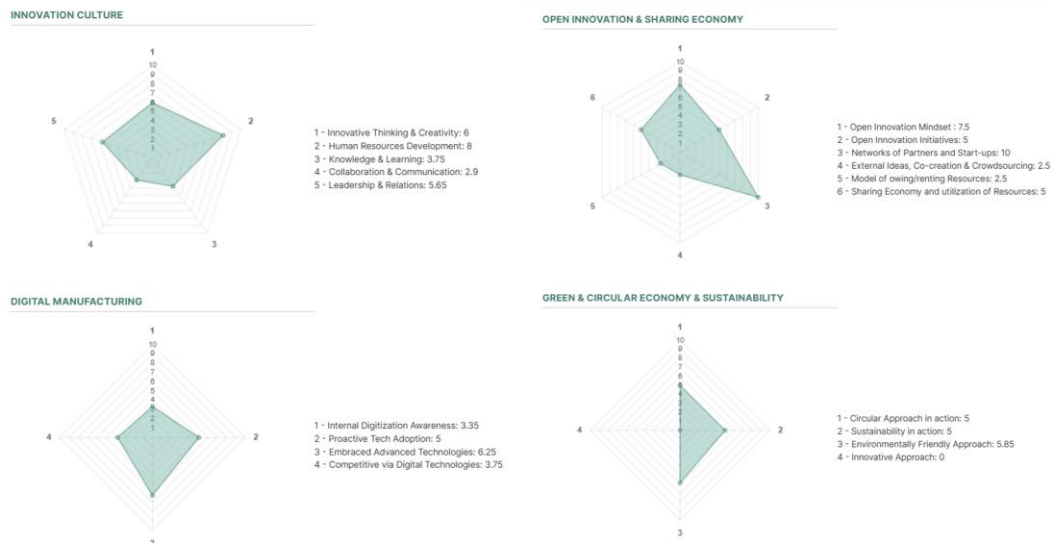


Figure 7: Radar Charts with Features and Scores

Descriptive Summary

In addition to the charts, Step 1 generates a descriptive summary of key findings, automatically produced by an LLM-based API with a pre-defined prompt. This textual explanation highlights:

- The two strongest features (represented by higher scores/“green” indicators), emphasizing good practices and potential areas of competitive advantage.
- Up to two features with medium-level scores (often labelled “yellow”), indicating moderate performance or mild challenges.
- Up to two features where lower scores (“red” indicators) suggest urgent attention or a potential risk to overall transformation goals.

If the company’s performance across all pillars is consistently high (i.e., no pillar requires special intervention), the system still suggests proceeding to Step 2, including a recommendation on which specific pillar(s) should be addressed, to identify incremental improvements or optimization strategies.

3.2.1.3. Overall Outcome

The Step 1 output thus serves as both an early-warning mechanism and a quick reference, enabling SMEs to appreciate their current transformation readiness and highlighting domains where enhancements are likely to provide significant added value. This initial stage sets the groundwork for subsequent steps, ensuring that companies enter Step 2 with a clear understanding of their baseline performance.

3.2.2. Step 2 output

The Step 2 output is generated once users have selected one or more pillars for further, in-depth analysis at the beginning of Step 2. The primary objective is to provide customized suggestions that specifically address the areas identified as requiring improvement. These recommendations draw on the user’s inputs in Step 2 and Step 1 of the questionnaire and reflect the structure agreed upon among project partners.



3.2.2.1. Placement of Recommendations

Following the Step 1 results, the system generates detailed guidance for each pillar the user chose to explore during Step 2. The output aggregates all relevant feedback—numerical, graphical, and textual—to show the user exactly where targeted interventions may yield meaningful improvements.

3.2.2.2. Key Components

- **Charts and Graphical Indicators:** Updated visualization is provided to include the new insights gained in Step 2 and to capture the user’s performance on individual features or subcategories of the selected pillars. The emphasis is on immediate readability, so the user can quickly discern relative strengths and weaknesses.
- **Activities Suggested:** The tool translates the user’s answers into clearly identified “red” or “yellow” activities, referencing potential steps to remedy shortcomings or to refine moderately performing areas. These activities fall into three principal categories:
 - *Training:* Focuses on structured sessions for developing specific expertise or knowledge.
 - *Mentoring:* Involves personalized guidance from professionals who can offer sustained support in priority areas.
 - *Expert Consultation:* Entails specialized advice or solutions that may be necessary for complex issues requiring higher-level intervention.

3.2.2.3. Tailoring Recommendations to Pillars

- **Selected Pillars:** For each pillar the user opted to investigate further, the output itemizes both red and yellow activities. These become recommended next steps for the organization, each aligned with an identified need. Red activities address critical gaps, while yellow activities are optional but beneficial opportunities for improvement.
- **Non-Selected Pillars:** If a pillar was not chosen during Step 2 but the responses indicated any red features in Step 1, those outstanding issues are still noted. This ensures that companies remain aware of potential improvement avenues outside the selected scope, preventing valuable insights from being overlooked.

3.2.2.4. Additional Explanatory Text

- Beyond simply listing activities, the system provides concise explanations to highlight why each activity is relevant to the user’s current situation. This section will also be expanded to indicate further resources—like webinars, best practices, or interviews—may be available for deeper exploration, particularly when the pillar or feature displays significant shortfalls.
- If the organization excelled in particular pillars, or if their performance closely approached a target level, these achievements are briefly acknowledged to underscore strengths.

3.2.2.5. Overall Outcome

By structuring the Step 2 output in this manner, the tool offers a clear and prioritized action plan. While results are primarily anchored in the questionnaire data, the new approach encourages users to concentrate



on the pillars they deem most urgent, all while ensuring that critical issues from unselected pillars do not go unnoticed. The categories of recommendations (Training, Mentoring, Expert Consultation) provide a coherent foundation for improving performance, directly linked to the highlighted features within each pillar.

Ultimately, the Step 2 output gives organizations the means to:

- Understand, at a glance, where their performance stands in each selected pillar.
- Take direct, relevant steps to address challenges.
- Recognize any major issues, even in areas they did not actively investigate.

This refined structure reflects the aim of delivering a practical, user-focused experience that pinpoints needs in an easily interpretable format. Through descriptive narratives, specialized activities, and succinct next steps, the Step 2 output is designed to guide companies toward effective solutions aligned with the SMERF project’s broader transformation goals.

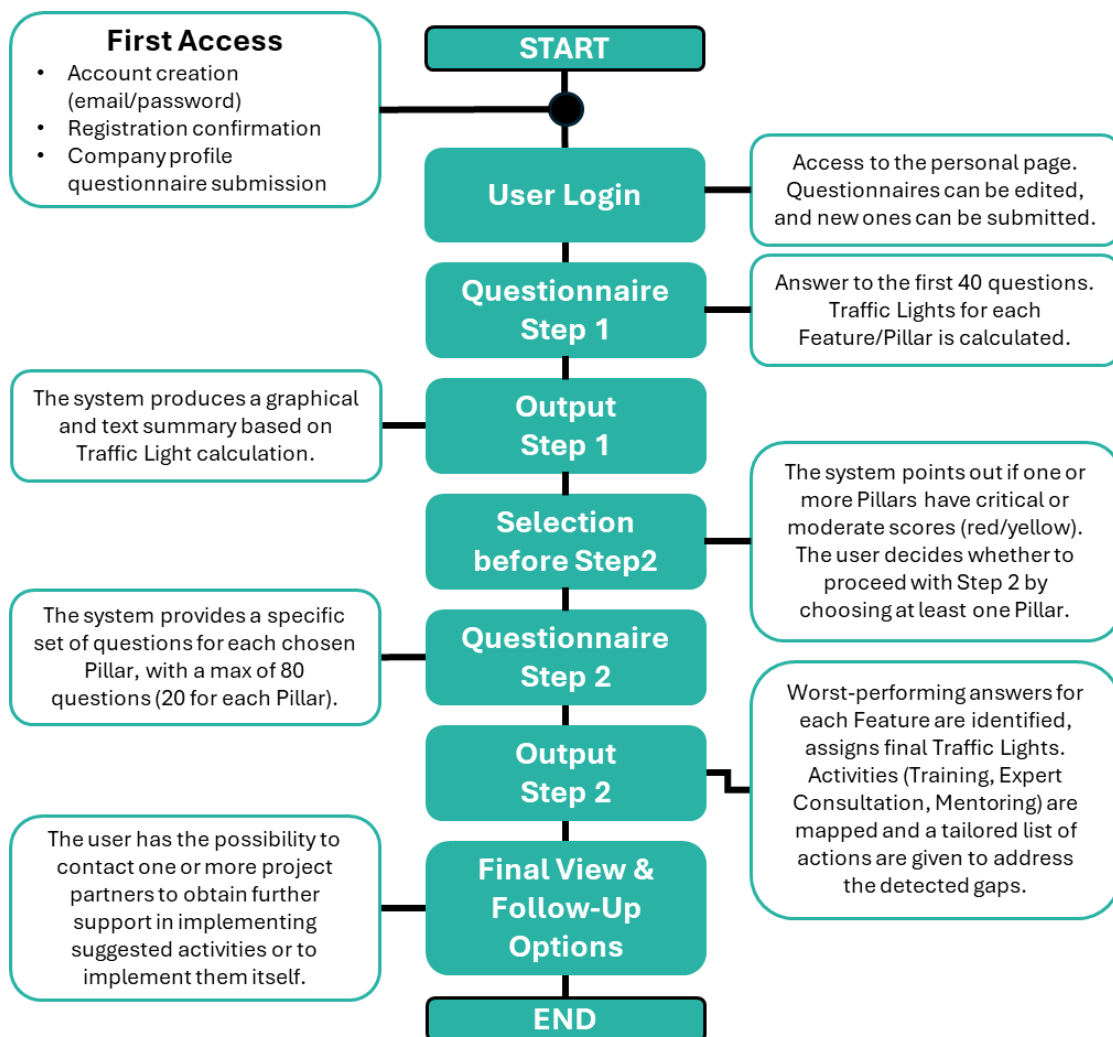


Figure 7: General Diagram of Tool's functioning



3.3. Backend

The SMERF tool includes a comprehensive backend system that provides full and detailed control over all aspects of the platform. This backend serves as the administrative interface through which users with appropriate permissions can manage the tool's functionalities efficiently. This permission has been granted only to project's partners, so to allow them to directly interact with the tool, without the constant supervision of the software house. The backend allows for modifications across multiple entities, including features, questions, answers, and activities, ensuring that the tool remains adaptable to evolving project requirements. Managers and Pillars leaders, as described in chapter 2, can access the Admin page, where different functionalities are available depending on their assigned role.

The backend enables admins to manage features by editing their assigned pillar or modifying their names while ensuring that internal codes remain unchanged. Questions, which are structured according to their associated feature and pillar, can also be modified, allowing admins to adjust their text while keeping their related answers intact. Similarly, answers are linked to specific questions, and admins can edit their content while maintaining their assigned codes and ordinal numbers. These answers also determine the activities suggested to SMEs, making their correct configuration crucial.

The backend further facilitates the management of activities, which are associated with specific questions and answers, playing a fundamental role in guiding SMEs through their transformation process. Admins can edit activity descriptions, verify their linked elements, and ensure consistency across the tool. The backend system ensures seamless control over all aspects of the self-assessment tool, maintaining its coherence and reliability within the SMERF project.



4. Appendix A

4.1. Terms & Conditions

1. Introduction

These Terms and Conditions govern your use of the SMERF Diagnostic Tool, developed by the SMERF consortium. By accessing or using the tool, you agree to comply with and be bound by these terms.

2. User Eligibility

The SMERF Diagnostic Tool is intended for use by Small and Medium Enterprises (SMEs) across Europe. By registering, you confirm that you are authorized to act on behalf of your company and that the information provided is accurate and complete. You also agree to update your account information promptly in case of any changes to ensure accuracy.

3. Registration and Account Security

To access the tool, you must register by providing your first name, last name, email address, and company name. You agree to:

- Provide accurate and current information during registration and update it when necessary.
- Maintain the confidentiality of your login credentials.
- Notify us immediately of any unauthorized use of your account.

We reserve the right to suspend or terminate accounts that violate these terms, are used inappropriately, or contain outdated or false information. Users can request the deletion of their account and associated data by contacting support.

4. Use of the SMERF Diagnostic Tool

The tool is provided to assist SMEs in self-assessment and to offer tailored recommendations for improvement, such as training and mentoring. You agree to use the tool solely for its intended purposes and not to:

- Engage in any activity that could harm or disrupt the tool's functionality.
- Attempt to gain unauthorized access to any part of the tool or its related systems.
- Use the tool for any unlawful or fraudulent purposes.

5. Intellectual Property Rights

All content, design, and software associated with the SMERF Diagnostic Tool are the property of the SMERF consortium and are protected by intellectual property laws. Unauthorized reproduction, distribution, or modification of any materials is prohibited.

6. Data Protection and Privacy

Your use of the tool is subject to our Privacy Policy, which outlines how we collect, use, and protect your personal data. By using the tool, you consent to the processing of your data as described in the Privacy Policy. You are responsible for ensuring that any data you provide is accurate and does not infringe on third-party rights.



7. Disclaimers and Limitation of Liability

The SMERF Diagnostic Tool is provided "as is" without warranties of any kind. While we strive for accuracy, we do not guarantee that the tool will be error-free or uninterrupted. To the fullest extent permitted by law, the SMERF consortium disclaims all liability for any direct, indirect, or consequential damages arising from your use of the tool. Additionally, we are not liable for any data breaches or unauthorized access to user data beyond our reasonable control.

8. Modifications to the Tool and Terms

We reserve the right to modify or discontinue the SMERF Diagnostic Tool at any time without notice. Additionally, we may update these Terms and Conditions from time to time. Continued use of the tool after such changes constitutes acceptance of the new terms.

9. Termination and Data Deletion

We may suspend or terminate your access to the tool if you violate these terms, misuse the tool, or provide false or outdated information. Users may request account deletion by contacting support. Upon approval, we will remove associated data, except where retention is required by law or for legitimate business purposes.

10. Governing Law and Jurisdiction

These Terms and Conditions are governed by the applicable laws of the European Union and the country where the SMERF consortium is based. Any disputes arising under these terms shall be resolved in the competent courts of that jurisdiction.

4.2. Privacy Policy

1. Introduction

Welcome to the SMERF Diagnostic Tool. We are committed to protecting your personal data and respecting your privacy. This Privacy Policy outlines how we collect, use, and safeguard your information in compliance with the EU General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679).

2. Data Controller and Data Protection Officer

- Data Controller: Wrocław University of Science and Technology, 27 Wybrzeże Stanisława Wyspiańskiego St., 50-370 Wrocław, Poland.

- Data Protection Officer (DPO): Eng. Riccardo Masiero.

For any inquiries regarding data protection, please contact: gdpr@crit-research.it.

3. Personal Data Collected

We collect the following personal data when you register and use the SMERF Diagnostic Tool:

- Identification Data: First name, last name, job title, and company name.
- Contact Information: Email address and/or phone number.
- Usage Data: Interaction details with the tool, including login times, activity logs, and responses to the questionnaire.

4. Purpose and Legal Basis for Processing

Your personal data is processed for the following purposes:

- Service Provision: Ensuring functionality and usability of the SMERF Diagnostic Tool.



- Analysis and Improvement: Evaluating responses and company performance to provide tailored recommendations.
- User Support: Responding to inquiries and addressing issues.

Legal Bases:

- Performance of a Contract (Article 6(1)(b) GDPR): Processing is necessary to provide the requested service.
- Legitimate Interests (Article 6(1)(f) GDPR): Processing is necessary to improve our services and provide personalized recommendations.

5. Data Sharing and Disclosure

We do not sell or rent your personal data. However, we may share your information with:

- SMERF Consortium Partners: Trusted project partners for the purposes outlined above.
- Service Providers: Third-party providers assisting in tool operation and data analysis, subject to confidentiality agreements.
- Legal Compliance: When required by law or to protect our rights and safety.

Anonymized data may be used in scientific publications related to the SMERF project.

6. Data Retention

Your personal data will be retained only as long as necessary to fulfill its collection purposes, including legal, accounting, or reporting obligations. Specifically, data will be retained for no longer than five years after the SMERF project concludes.

7. Data Subject Rights

Under GDPR, you have the right to:

- Access: Confirm whether your personal data is processed and access it.
- Rectification: Request correction of inaccurate personal data.
- Erasure: Request deletion of your personal data under certain conditions.
- Restriction: Request limitation of processing your personal data.
- Data Portability: Receive your data in a structured, machine-readable format.
- Objection: Object to the processing of your personal data in specific situations.

To exercise these rights, contact our DPO at gdp@crit-research.it. Requests will be processed within 30 days.

8. Data Security

We implement robust technical and organizational measures to protect your personal data, including:

- Encryption of stored and transmitted data.
- Role-based access controls ensuring only authorized personnel handle data.
- Continuous monitoring and incident response protocols for potential breaches.



Despite these measures, no system is entirely secure, and we cannot guarantee absolute security.

9. International Data Transfers

The SMERF project may involve partners outside the European Economic Area (EEA). When transferring data to such countries, we implement:

- Standard Contractual Clauses (SCCs): Ensuring equivalent protection to GDPR.
- Explicit User Consent: If necessary, obtained prior to transfer.

10. Changes to This Privacy Policy

We may update this Privacy Policy periodically. Any changes will be posted on this page with an updated revision date. We encourage you to review this policy regularly.

11. Contact Information

For any questions or concerns regarding this Privacy Policy or our data practices, contact:

- Data Protection Officer: Eng. Riccardo Masiero
- Email: gdpr@crit-research.it
- Organization: CRIT

4.3. Example of Traffic Light calculation and suggested activities pointing

The following examples illustrate how different answer combinations for the “Open Innovation Initiatives” feature of Pillar III “Open Innovation and Sharing Economy” alter both the Traffic Light calculation and the suggested activities. In the first example, a single question with a strongly negative answer drives down the overall score, resulting in one recommended training. In the second example, two moderate negatives combine to lower the feature’s rating, triggering multiple suggestions for improvement. This side-by-side view shows how the tool pinpoints varying gaps and tailors its activity recommendations accordingly.

4.3.1. Example 1

Pillar: III

Feature: II [Open innovation initiatives]

Feature max score: 4 [4 questions are assigned to this feature]

- **Question I:** Has your organization ever considered using crowdfunding* (e.g. for product development, to support innovation process or other purposes)?
- **Answer I:** We have considered it, and it is possible. [**Score: 0.5**]
- **Question II:** In our organization employees know how to select various types of partnerships for the innovation process (e.g. joint-ventures, co-branding, comarketing, referral agreements, licensing agreements, etc.).
- **Answer II:** Strongly agree [**Score: 1**]
- **Question III:** Our organization is experienced in mapping an ecosystem to identify potential partners for the competences we need.
- **Answer III:** Strongly disagree [**Score: -1**]
- **Question IV:** In our organization employees are able to easily access existing internal knowledge (e.g. during seminars or internal webinars) leading to innovation process.



- **Answer IV: Disagree [Score: -0.5]**

Sum of the scores: 0 [0.5 + 1 - 1 - 0.5]

Feature Color: Yellow [0/4 = 0]

Question(s) with lowest score: Question III [-1]

Advised Activities: [The one connected the the Answer III]

- **Training:**
 - Consider to implement a training that introduces the basics of ecosystem mapping and emphasizes its importance in identifying potential partners. This training should help your team learn about the key elements of ecosystem mapping, including how to identify and evaluate partners relevant to your company's competencies. It should also provide practical tools and techniques for creating initial ecosystem maps and understanding their strategic value.

4.3.2. Example 2

Pillar: III

Feature: II [Open innovation initiatives]

Feature max score: 4 [4 questions are assigned to this feature]

- **Question I:** Has your organization ever considered using crowdfunding* (e.g. for product development, to support innovation process or other purposes)?
- **Answer I:** We have considered it and it is possible. **[Score: 0.5]**
- **Question II:** In our organization employees know how to select various types of partnerships for the innovation process (e.g. joint-ventures, co-branding, comarketing, referral agreements, licensing agreements, etc.).
- **Answer II:** Strongly agree **[Score: 1]**
- **Question III:** Our organization is experienced in mapping an ecosystem to identify potential partners for the competences we need.
- **Answer III:** Disagree **[Score: -0.5]**
- **Question IV:** In our organization employees are able to easily access existing internal knowledge (e.g. during seminars or internal webinars) leading to innovation process.
- **Answer IV:** Disagree **[Score: -0.5]**

Sum of the scores: 0.5 [0.5 + 1 - 0.5 - 0.5]

Feature Color: Yellow [0.5/4 = 0.125]

Question(s) with lowest score: III [-0.5] and IV [-0.5]

Advised Activities: [The one connected the the Answer III + the one connected the the Answer IV]

- **Training:**
 - Consider to implement a training that introduces the fundamentals of ecosystem mapping to identify potential partners for needed competences. This training will help your team learn how to create effective maps of their innovation ecosystem, identify key players, and assess their relevance. The training should also include practical exercises and case studies to illustrate the application of these concepts in real-world scenarios.
 - Consider to implement a training that focus on improving employees' ability to access and utilize existing internal knowledge. Participants should learn best practices for navigating and leveraging internal resources, including how to effectively use seminars, webinars,



and other knowledge-sharing platforms. The training should also cover practical tips for enhancing the accessibility and relevance of internal knowledge to support the innovation process.



Quality Assurance Approval

Partner	Member of the Quality Assurance Team	Result of the quality check	Date of the quality check
(QAT1)	Jennifer Quoc (PP2 BIZ-UP)	<input checked="" type="checkbox"/> accepted <input type="checkbox"/> rejected	27.03.2025.
(QAT2)	Federico Manara (PP7 UNIGE)	<input checked="" type="checkbox"/> accepted <input type="checkbox"/> rejected	31.03.2025.