SUSTAIN

SUSTAIN Eurocluster
1st Open Call Networking Event

Friday, 22 November 2024

IEM - Integrated Evaluation Model for SRI and EPC

The SUSTAIN project has received funding from the European Union's Joint Cluster Initiatives (EUROCLUSTERS) under grant agreement No 101074311.

The IEM experiment in a nutshell

Overview of our project and its main objectives

PACI GLOBAL

- Founded in 2001.
- Has been carrying out EPC since 2012.
- Increases accessibility and encourages adoption of energy efficiency standards.
- Enhancing efficiency and sustainability in new and existing buildings.

The IEM experiment in a nutshell

Overview of our project and its main objectives

Project summary:

Unified framework combining SRI (Smart Readiness Indicator) and EPC (Energy Performance Certificate) evaluations to eliminate duplication, reduce costs, and improve regulatory compliance.

Why it matters:

- Simplifies the evaluation and data process for building auditors.
- Reduces costs associated with separate SRI and EPC assessments.
- Increases accessibility and encourages adoption of energy efficiency standards.

The IEM experiment in a nutshell

Overview of our project and its main objectives

Main objectives:

- **Unified methodology for SRI and EPC**

Two approaches: Simplified for basic structures and Detailed for complex buildings.

- **Optimized data collection and analysis**

Streamlined processes for evaluating and implementing energy improvements.

- **Cost reduction and accessibility**

Lower certification costs, easier compliance, and broader adoption.

- **Tool adaptability, integration and scalability**

Integration coherence data with requested on certification platforms to meet EU regulatory requirements.

- **Support for EU sustainability goals**

Aligns with Europe’s goals for improved energy efficiency in buildings.

The IEM experiment in a nutshell

Overview of our project and its main objectives

1st Activity

- Development of the functional requirements of the diferent methodologies.
- Intricately outline diverse methodology requirements, emphasizing unique differentiators.

2nd Activity

- Model design and data need Integration for EPC and SRI.

3rd Activity

- Validation of model components in a relevant environament.
- Realization of 50 visits using the model IEM for data collection para EPC i SRI.

The IEM experiment in a nutshell

Overview of our project and its main objectives

4th Activity

- Analysis of the data obtained and implementation of the model IEM.
- Comprehensive analysis of the experience of model use, to improve its functionality.

5th Activity

- Complete validation model IEM, exposing its efficiency and the process optimization of data collection.

The IEM experiment in a nutshell

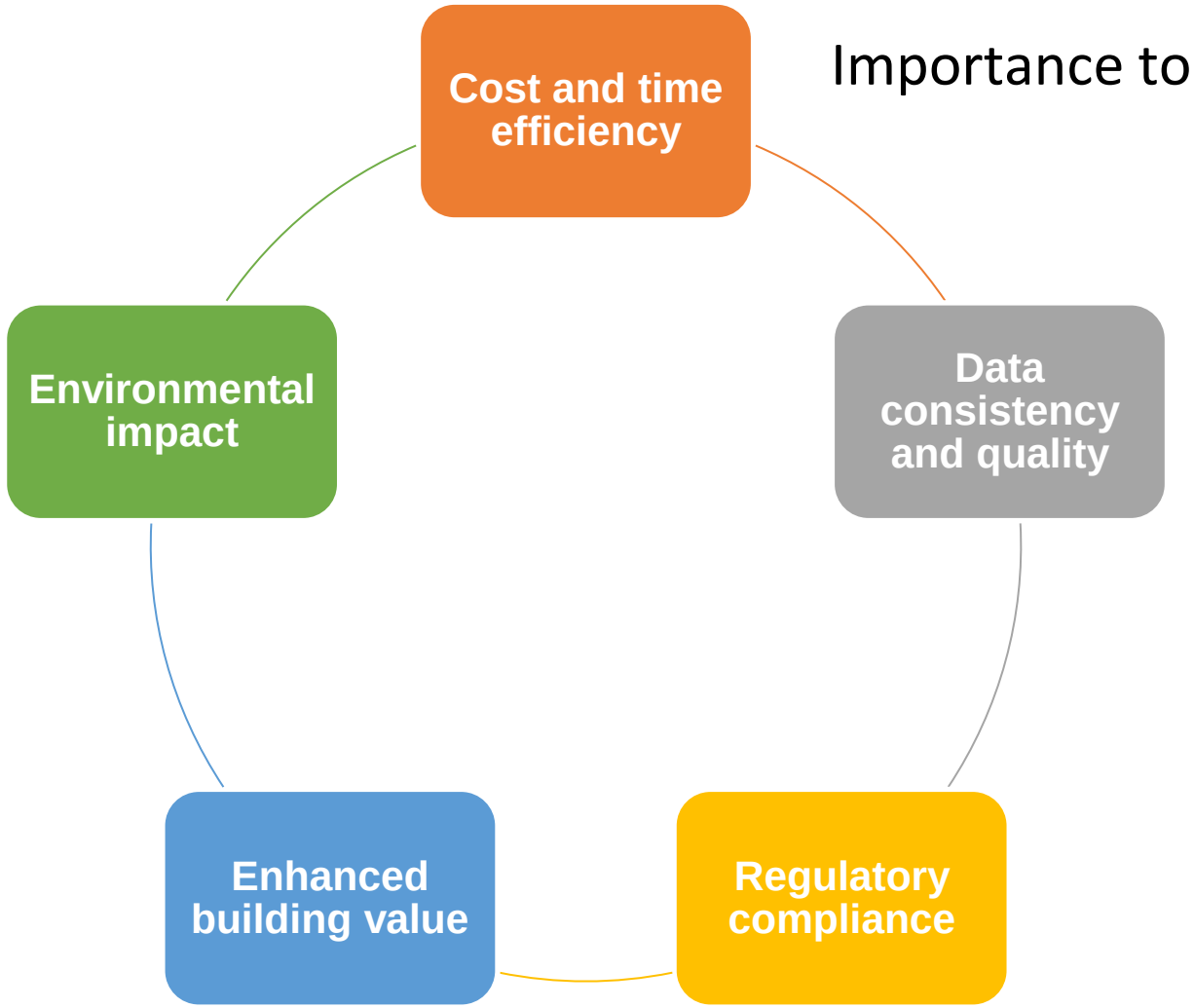
Problem or challenge does our project aim to solve

- **Current issue**:
  - *Separate SRI and EPC assessments lead to duplicated processes and higher costs.*
  - *Inconsistent evaluations can reduce the effectiveness of certifications.*

- **Impact**:
  - Increased costs and time burden on building auditors.
  - Fragmented data limits the accuracy and insight of building assessments.

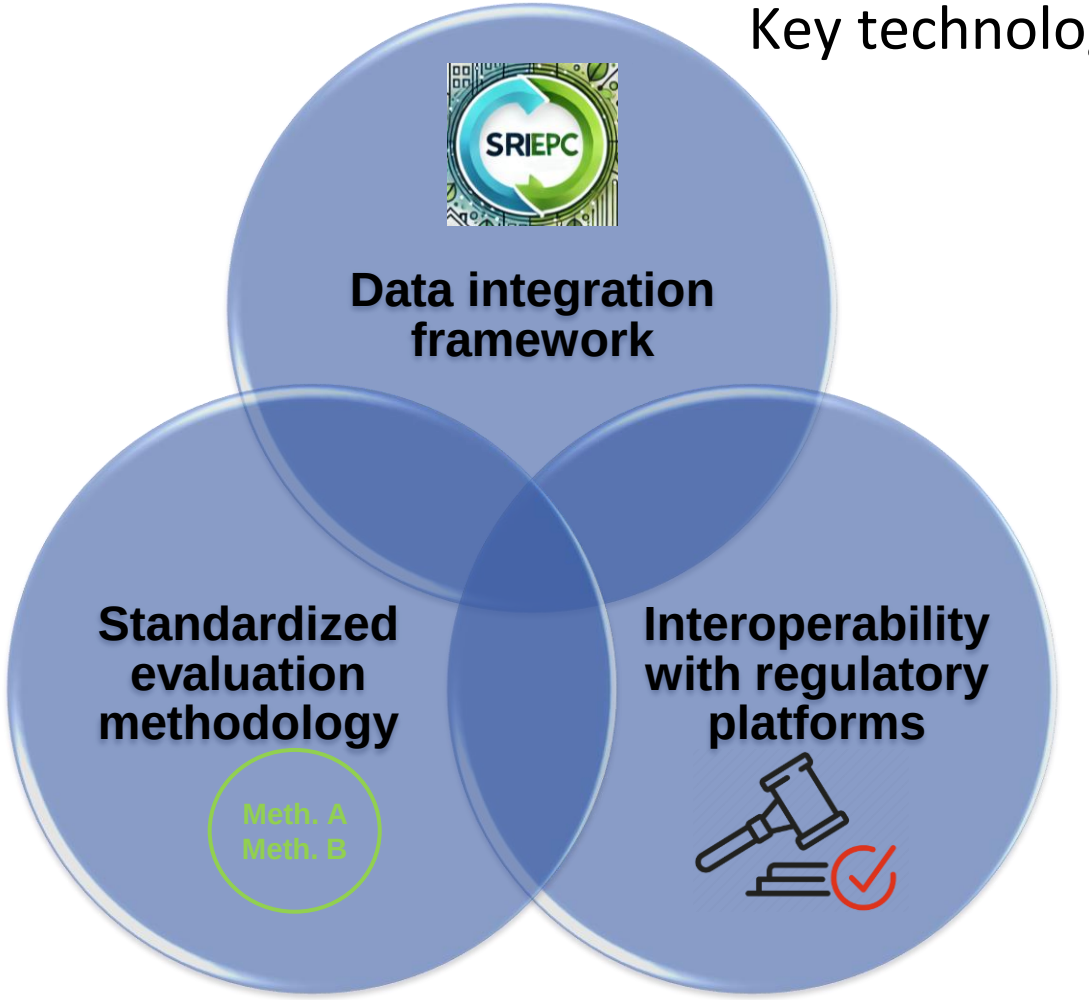
The IEM experiment in a nutshell

Importance to address the issue

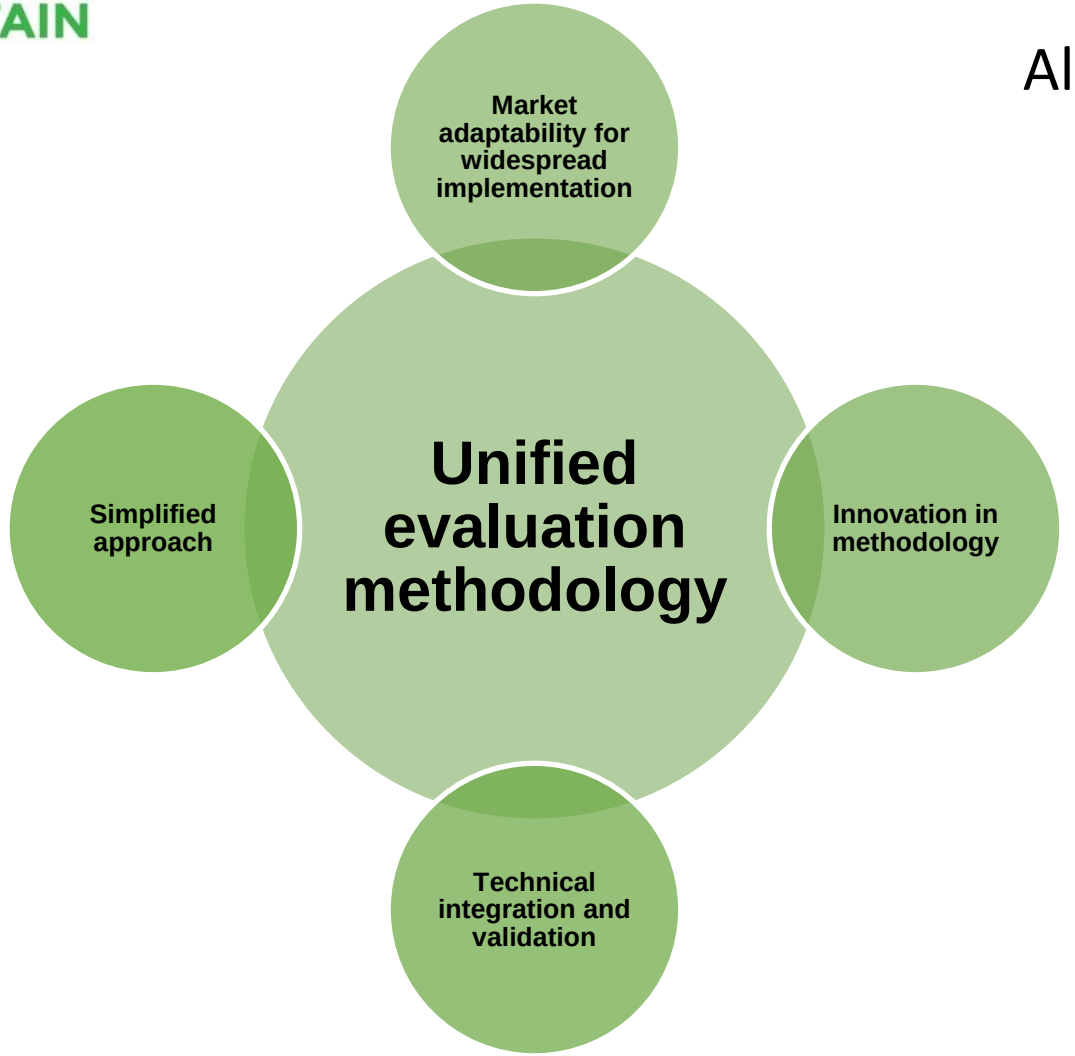


The IEM experiment in a nutshell

Key technologies and approaches



The IEM experiment in a nutshell



Alignment of our project with SRI framework

	CE3X		SRI	
Requeriments	Residential	Non-residential	Residential	Non-residential
1) General building data	X	X	X	X
2) Building Thermal Envelope	X	X		
2.1) Windows and skylights	X	X	X	X
3) Domestic Hot Water Generation Equipment	X		X	X
4) Cooling Generation Equipment	X	X	X	X
5) Heating Generation Equipment	X	X	X	X
6) Energy and renewable energy	X	X	X	X
7)Ventilation		X	X	X
8) Lighting		X	X	X
9) Electric Vehicle Charging			X	X
10) Building monitoring and control systems			X	X

Challenges and Risk Management

Main technical and operational challenges encountered and its strategies

Underdevelopment of Smart Readiness Solutions

- Low control and automation systems
- Smaller sample for testing
- Adapting Sample Selection and Evaluation Forms

Limited Diversity in Property Types

- Similar technological characteristics, lacking sensors and automation
- Difficulty in obtaining a diverse and representative sample
- Preclassifying properties by Technological Level

Shortage of High-Automation Properties

- Fewer properties with full automation and high control
- Test limits on advanced smart properties
- Expanding and Simulating High-Tech Scenarios

Challenges and Risk Management

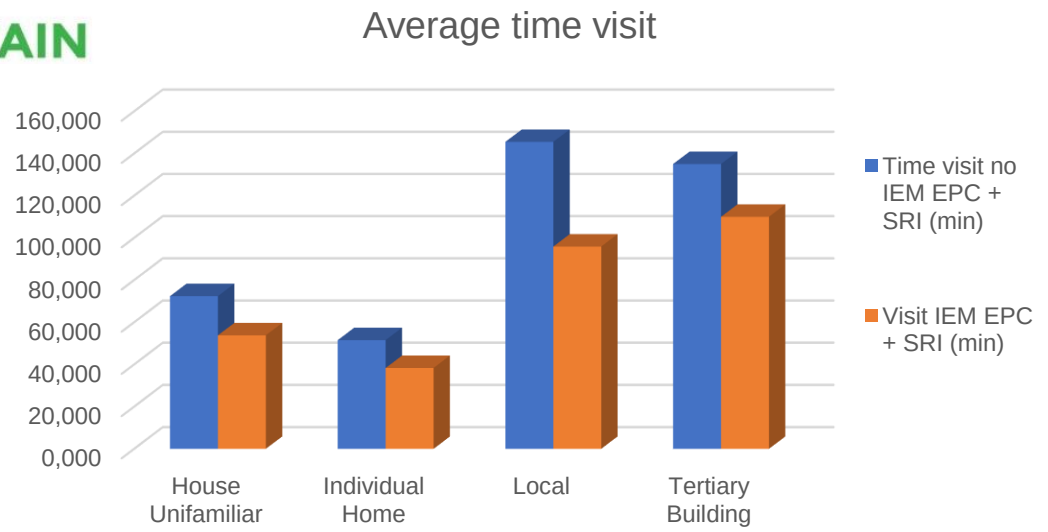
Project anticipated and emerging risks and its managing stratagy

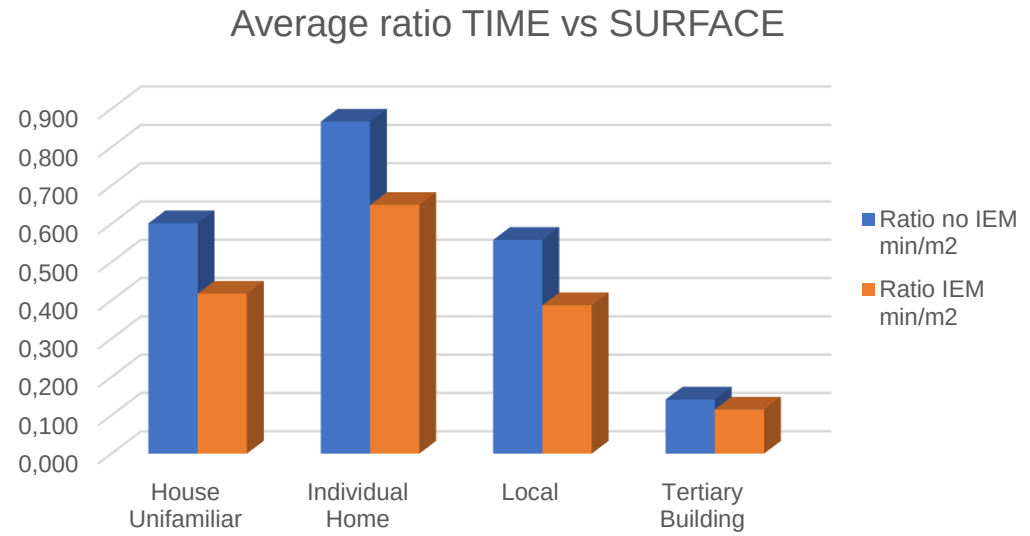
Risk Type	Description	Potential Impact
Anticipated Risk	• Limited Diversity in Property Types • Similar technological characteristics, lacking sensors and automation	• Difficulty in obtaining a diverse and representative sample • Compromise the experiment's validity • Limit the generalizability of findings
Emerging Risk	• Pronounced limited diversity risk	• The reliability of the evaluation model. • The model's applicability across various property types.

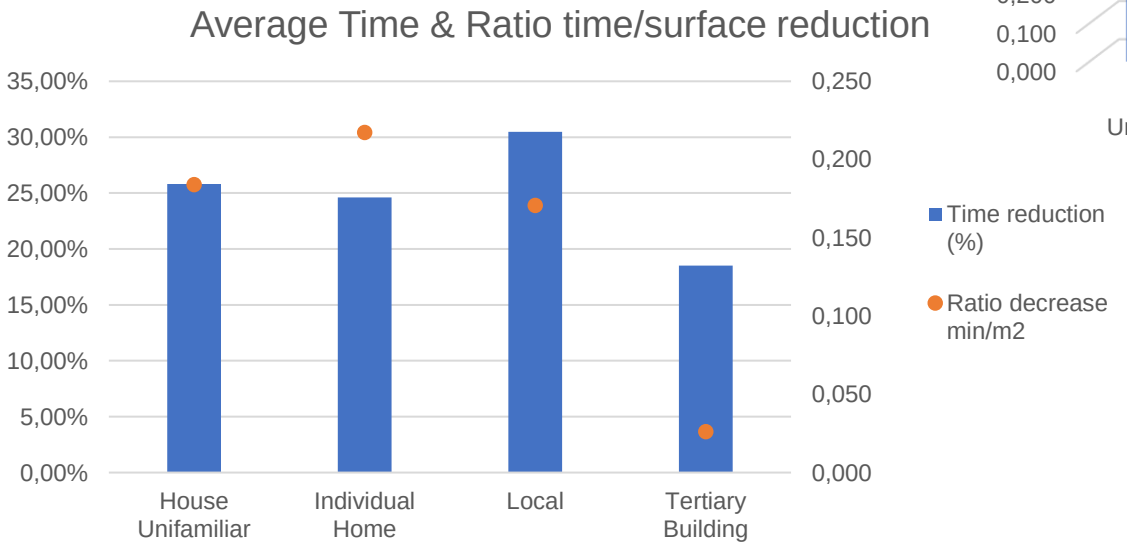
Mitigation Strategy -> Expanded Data Collection

Conclusions of the IEM experiment

Results of our project







Conclusions of the IEM experiment

General Findings

- Major residential properties scored an SRI < 20%
- Aging building stock
- High SRI scores are observed only in newly constructed homes, with smart systems integrated.

Sector-Specific Insights

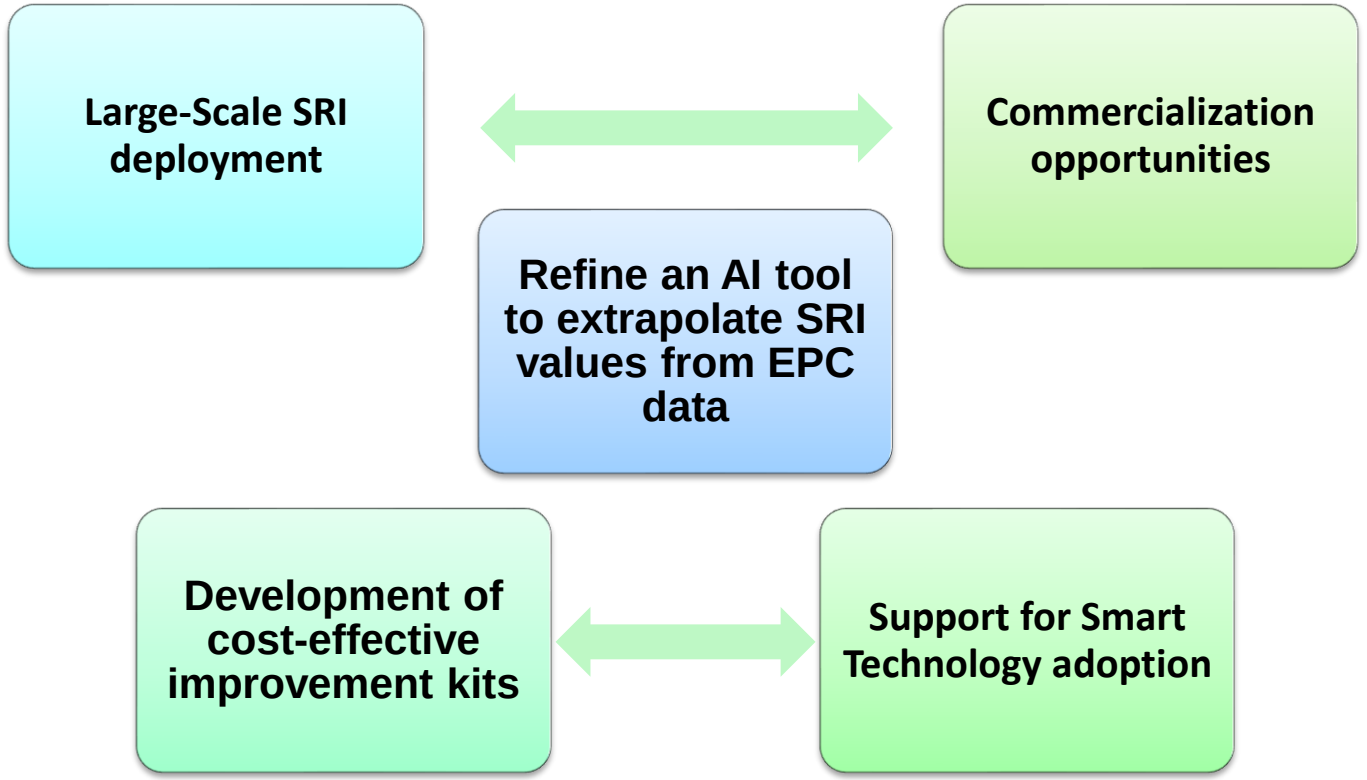
- **Residential Sector:** Needs focused strategies for modernization.
- **Tertiary Sector:** Have higher SRI potential due to advanced systems (e.g., photovoltaics, EV chargers).

Efficiency in Data Collection

- **Larger Properties:** Proportional time savings in combined visits for EPC and SRI assessments.
- **Integration Potential:** Combining evaluations (CEE + SRI) enhances process efficiency.

Next Steps

Next steps for scaling, commercializing, or further developing our solution



Q&A

SUSTAIN

Thank you

Andreu Batalla
andreu.batalla@paci.biz
Iu Perramon
iu.perramon@paci.biz

www.paci.biz

paci global