



**Total Resource and Energy Efficiency
Management System for Process Industries**

Deliverable **8.11**

Report on stakeholders observatory – 3rd year

Date: 30/08/2018

WP8 Dissemination and Communication

T8.4 Dialogue with stakeholders

Dissemination Level: Public

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SPRE Sustainable Process Industry through
Resource and Energy Efficiency



Total Resource and Energy Efficiency Management System for Process Industries



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1. Introduction

Stakeholder participation plays an increasingly important role in achieving a successful project outcome, improving the relevance or utility of the research to users and beneficiaries, thus increasing the likelihood that project results are adopted and applied. Stakeholders are all individuals, groups or organizations who are likely to hold an interest in the project outcomes, including those who have power to influence the uptake of the research findings.

Since stakeholders have different expectations and influence on the project results, it's vital to the project's successful completion to accurately identify its stakeholders, set the relevant levels of engagement and communicate accordingly.

This document presents the stakeholder engagement strategy for MAESTRI as well as the activities undertaken during the first year of the project within Work Package 8, task 8.4 – Dissemination and Communication – Dialogue with stakeholders.

2. Objectives and approach

Stakeholder engagement strategy must be designed in line with the MAESTRI project dissemination and communication main objectives, i.e., increase validity in project results and deliverables, promote dissemination of the project among third parties, spread replication and boost the exploitation results.

For this purpose, an international network of stakeholders is being developed which includes policy makers, industries, businesses, industrial clusters and associations, scientific community, NGO's, social media and general public.

All these stakeholders will have different levels of engagement as explained further in this document, according to their different interests/concerns in the research and influence on the MAESTRI project activities and results, including those who have power to influence the uptake of the research findings.

In order to achieve the refereed objectives, the main contributions expected from the stakeholders during and after MAESTRI project duration phases are:

- a) Methods and data review in order to increase the robustness of the outputs (mainly process industry);
- b) Process validation;
- c) Data provision;
- d) Assist in defining and developing tools
- e) Implementation of results – testing outputs of the research (e.g. tools, new methodologies, strategies)
- f) Define, develop and help deliver knowledge exchange activities and publications
- g) Networking and awareness raising with non-contributory stakeholders
- h) Review project success, including stakeholder engagement approach
- i) Publicity, promotion, via channels such as websites, academic materials, research reports, newsletters, books, guidelines, social media and the general media;
- j) Identify future information, tools and research needs
- k) Develop stakeholder-led monitoring and networking beyond MAESTRI project life.

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Different methods for stakeholder engagement were selected according to the different levels of engagement and expected role of each stakeholder, and taking also into consideration the project objectives and timing of the project activities.

The adopted stakeholder engagement strategy is described in the following chapters.

3. Stakeholder engagement strategy for MAESTRI

3.1 STAKEHOLDER IDENTIFICATION AND CATEGORIZATION

MAESTRI stakeholders were grouped in the following categories, according to their interests and influence:

- Process industries;
- Other industries and or businesses across different activity sectors;
- Industrial and entrepreneurial parks;
- Industrial associations, agencies and clusters;
- Academia, research and scientific community (universities, R&D Centers, etc.);
- Policy makers (European Commission, Member states governmental agencies, national, regional and local authorities);
- Environmental Non- governmental associations (NGOs);
- General public.

Relevant stakeholder organizations (and their respective contact points) which will be asked to participate in the several engagement activities further described, have already been identified by each project partner. This information is being compiled and organized by SINERGIE for future dissemination and communication activities.

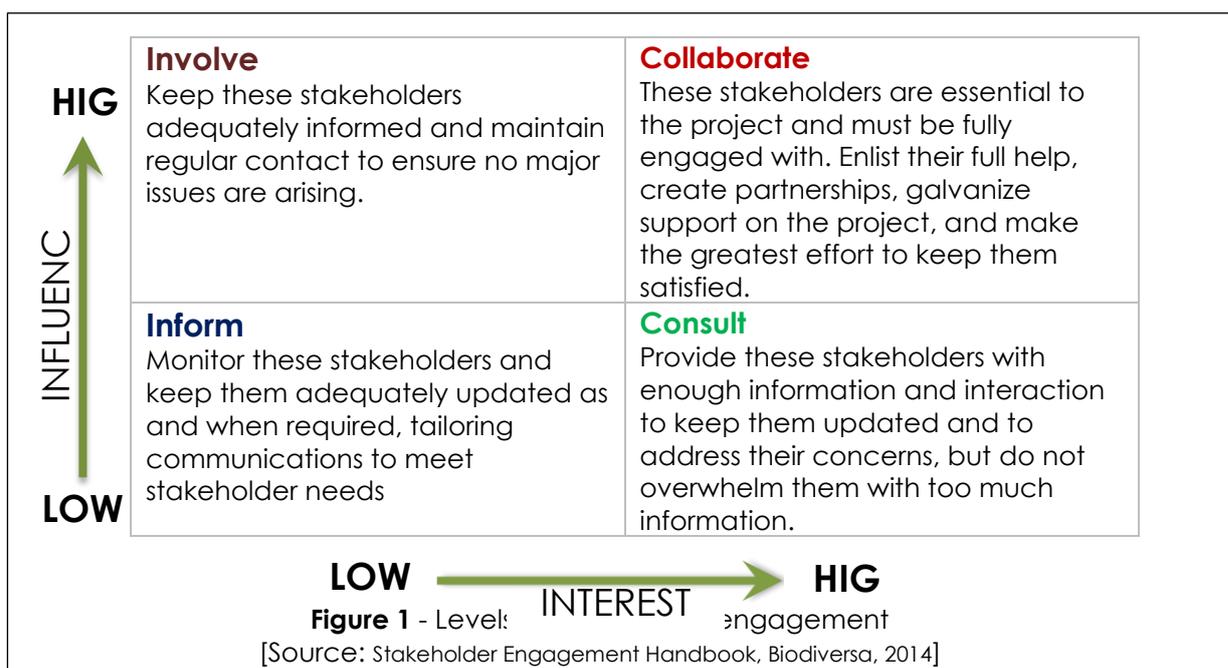
MAESTRI has already the support from relevant European and national organizations namely, DHC (EU), DECHEMA (DE), PRODUTECH (PT), ENERGYIN (PT), ENEA (IT), PROPLAST (IT), SACMI (IT)

3.2 LEVELS AND METHODS OF STAKEHOLDER ENGAGEMENT

Stakeholders must be prioritized according to a set of guiding questions which are used to establish their importance and influence:

- Whether they have a high or low interest in the project;
- Whether they have a high or low influence on the project;
- How will stakeholders be affected by the project results;
- Stakeholder connections to policy.

Bearing this in mind, stakeholders were further classified according to the 'level' of engagement, from the lowest level ('inform'), through the middle levels ('consult', and 'involve') to the highest level ('collaborate') as shown in the following figure.



For each type of engagement level there are several communication methods considered most appropriate. The following table presents the overall level of engagement defined for each MAESTRI stakeholder category, as well as the methods that were considered most suited, taking into consideration the project objectives and the main contributions expected from the stakeholders.

Level of engagement	Informative (one way)			Participative (two-way)						
	Inform			Consult	Involve		Collaborate			
Method of engagement	Website	Newsletters	Social Media	Website portal	Workshops	Stakeholder forums	Networking	Demonstrations	Interviews	Tools testing
Stakeholders										
Process Industries	X	X	X	X	X	X		X	X	X
Academia, research and scientific community from the same discipline	X	X	X		X	X	X			
Policy makers	X	X	X		X	X	X			
Other industries	X	X	X	X	X					X
Industrial clusters and associations	X	X	X	X	X	X				X
NGOs	X	X	X							
General Public	X	X	X							

Table 1 – Levels and Methods for stakeholder engagement in MAESTRI project

A description of the activities already undertaken and or previewed according to the project work program in each of the above referred methods of communication, is shown below.

3.3 DESCRIPTION OF ACTIVITIES

3.3.1. Website

MAESTRI website has been launched on February 2016 and is used to publish information on project events, activities and public documents, well as other relevant information related with the follow-up on the state-of-the-art of resource efficiency methodologies and tools, industrial symbiosis, management systems, and other relevant issues related with MAESTRI project scope of work.

3.3.2. Newsletters

Biannual newsletters will be issued and uploaded in the project website, reporting reporting project activities and main outcomes. The first newsletter was already issued on April 2016, presenting MAESTRI and its partners, the project vision and objectives, the workplan and the exploitation and dissemination strategy.

Since April 2018, the newsletter start to be issued every 2 months. The second newsletter has been issued in June 2018 and the third in August 2018.

3.3.3. Social Media

As LinkedIn is one of the most active professional networks today, a new Group on the project was created as an open forum for discussion about all aspects and as a place to share and collaborate. In addition, a Twitter profile was also created to share website contents.

Most project partners are using Research Gate, a social network for academic and corporate researchers and scientists. Research Gate contains a new feature to add projects and link research results to those projects. Two MAESTRI researchers have created a project profile (merging both was not possible once done) and added other MAESTRI researchers as contributors to them. In Research Gate, MAESTRI papers, articles, books and results are published by their authors. It is also possible to include updates on the project work or activities as small blog entries.

Google+ is used as a dissemination tool for the general public. It hosts blog articles on the trends and developments related to the 4 MAESTRI pillars as well as a news section related to MAESTRI advancements.

MAESTRI videos will be produced and uploaded in the project website and official youtube channel. Three videos will be produced, one presenting the project (5 minutes) and two others, of approximately 15 min long, will be produced promoting the findings of WP3. These videos will be in English, subbed in all partners local languages.

It will be important to target social media communications according to the different stakeholders to be reached. Different channels are for different users, hence the following table will be used as a guide to target communications.

Channel	Target	Typologies of possible messages	Typology of account that can be used	Notes
MAESTRI LinkedIn Group	Professionals and practitioners, researchers and industries (members of the LinkedIn group)	Text, Images, Pdf, link to external resources	Personal account of project's partners	Low effectiveness. It needs constant moderation and engagement. Limited number of group members. Users external to the group cannot see any post
LinkedIn Pulse	Professionals and practitioners, researchers and industries	Blog articles with the chance to embed any kind of media	Personal account of project's partners	Posts and articles are visible to the whole LinkedIn users and to external visitors as well. High effectiveness for the popularisation of project results
MAESTRI website	General public	All kind of media	Administrators account	No possibility to interact and discuss
Research Gate	Academic, Government and Corporate researchers	Scientific papers and articles, technical reports, books	Personal account of project's partners	Effective tool to share project's scientific articles, papers, deliverable with other researchers
YouTube channel	General public	Video	Official MAESTRI account	very effective. YouTube video are perfectly indexed. This will help MAESTRI website SEO and its position in search engines.
SlideShare	General public	Pdf, ppt	Personal accounts of project partners	Slideshare can be used to help the diffusion of project deliverables and publications

TWITTER	General public	micro-blogging posts with external links	Official MAESTRI account	medium effectiveness, it depends on keywords and retweets
Google+	General public	blog posts, articles	Official MAESTRI account	Effective in term of contents (article could be very informative). It's difficult to attract visitors as it is not a well diffused social media.

3.3.4. Workshops

During the project execution, each partner country will organize 2 workshops per country to present project activities and results, covering the project research areas: eco-efficiency, industrial symbiosis, management systems, motivation strategies and IoT.

The first national workshops have been realised in Italy and Poland. In UK, Germany and Portugal it is planned to organise them by the end of 2018. The second national workshop will be held in each project country by June 2019, before the final international conference.

With reference to the already organised workshops, below are reported the achieved results.

At the end of the project an international conference will be organized in Portugal.

MAESTRI project will also mark its presence in other relevant national and international conferences on sustainability and resource efficiency related issues, as a way to disseminate the project and its results through the scientific community.

Italy

The first MAESTRI national Workshop was held on Wednesday 23 May 2018 in Reggio Emilia (Italy), the town where the project partner SINERGIE has its headquarters.

Nuovi strumenti per la competitività in ottica Industria 4.0: Casi di successo dall'esperienza Europea e Nazionale

	TITOLO INTERVENTO	RELATORE
9:00	Accoglienza e saluti	Roberto Ricci Mingani - Regione Emilia Romagna
9:15	Strumenti attuativi per la competitività: bandi e opportunità per imprese e professionisti	F. Ghirardo e G. Garzin - BEP Srl
9:45	Percorsi d'innovazione e strumenti di tutela della proprietà intellettuale	Giovanni Pedè - Sinergie
10:15	Il progetto MAESTRI finanziato da H2020: sostenibilità delle imprese e strategie innovative di management	Rosaria Rossini - ISMB
10:45	MAESTRI: Focus sul pillar IoT - Internet of Things e presentazione del progetto Monsoon	Roberto Ronzani - LEAN Institute
11:15	MAESTRI: Focus sul LEAN Management: vantaggi per l'industria e casi studio di applicazione in ambito industriale	Beatrice Marchi - Università di Brescia
11:45	MAESTRI: Focus sul pillar Simbiosi Industriale	
12:15	Question time	
12:45	LUNCH BREAK	
14:00	Metodi di Project Management nell'Industria 4.0: certificazioni e cambiamenti in atto	Pierpaolo Maggi - AICA
14:30	Il progetto Eco-Mentor finanziato da Erasmus+: figura e ruolo del mentor nelle imprese	Federica Lo Cascio - SINERGIE
15:00	Il Bonus Formazione 4.0	Leo Barozzini - W.Training
15:30	Fondimpresa: le opportunità per le imprese sugli avvisi di sistema	Claudio Cattini - Orione - Fondimpresa ER
15:45	Il piano formativo SPECTRE e premiazione studenti I.T.C.G. Baggi	Speranza Boccafogli - SINERGIE
16:00	Question time e conclusione lavori	



Piano finanziato all'interno dell'Avviso 1/2016 di

W.TRAINING



Below, the agenda translated into English:

<h2 style="text-align: center;">New Tools for Competitiveness in Industry 4.0: Success Cases from European and National Experience</h2>		
	TITLE	SPEAKERS
9:00	Introduction and greetings	
9:15	Implementation tools for competitiveness: opportunities for companies and professionals	Roberto Ricci Mingani - RER
9:45	Strategic opportunities and success cases of Industry 4.0 in enterprises	E. Pesatori - Exergy Gruppo Maccaferri*
10:15	Innovation paths and tools of protection of the intellectual property	F. Ghirardo & G. Garzin - BEP Srl
10:45	MAESTRI project financed by 2020: sustainability in enterprises and innovative management strategies	Giovanni Pede - SINERGIE
11:15	MAESTRI: Focus on IoT pillar - Internet of Things and presentation of Monsoon project	Rosaria Rossini - ISMB
11:45	MAESTRI: Focus on LEAN Management: advantages for enterprises and cases of application in the industrial domain	Roberto Ronzani - LEAN Institute
12:15	MAESTRI: Focus on "Industrial Symbiosis" Pillar	Simone Zanoni & Beatrice Marchi - University of Brescia
12:45	LUNCH BREAK	
14:00	Project Management methods in Industry 4.0: certifications and currents changes	Pierpaolo Maggi - AICA
14:30	Training Bonus 4.0	Leo Barozzini - W.Training
15:00	Fondimpresa: opportunities for enterprises on system calls	Claudio Cattini - Orione - Fondimpresa ER
15:15	SPECTRE training plan and awarding ceremony of students from the I.T.C.G. Baggi	Speranza Boccafogli - SINERGIE
15:30	Eco-Mentor project financed by Erasmus+: mentor's role in enterprises	Federica Lo Cascio - SINERGIE
16:00	Stakeholder session Roundtable	
16:30	Question time and conclusion	

* Speakers yet to be confirmed



The public who attended the event was quite heterogeneous, including national stakeholders from different backgrounds: public authorities, representatives from the academic world, companies and chartered professionals such as Engineers, Architects and Industrial Technicians. It saw the participation of 54 people, including 12 speakers and 42 auditors among the public.

The Workshop, titled “**New Tools for Competitiveness in Industry 4.0: success cases from Europe and National Experience**”, aimed at achieving at least three objectives, strictly connected to MAESTRI as an overall project:

- Updating all stakeholders with news and results on the project
- Involving the general public in the discussion
- Getting feedback from other organisations and involved partners

In order to involve more stakeholders in the debate, we decided to identify Industry 4.0 and its multiple applications as the core theme of this Workshop, since this topic can be included into a wider and well-known path of enterprise innovation and development. This is one of the reasons why the Workshop was organized together with other two projects: **SPECTRE**, funded by the national fund Fondimpresa and aimed at making local enterprises more competitive on the market; and **ECOMENTOR**, an Erasmus+ project targeted on training and qualification opportunities for eco-industries.

The agenda of the Workshop was quite rich in contents and included the following lectures:

- Presentation of MAESTRI project. The speaker was Giovanni Pede from Sinergie, who gave the public an overview of the project, its achievements and further developments, by focusing in particular on sustainability in enterprises and

innovative management strategies. After this general presentation, each pillar was explained in detail in the course of the day

- Focus on the IoT pillar – Rosaria Rossini from ISMB (Istituto Superiore Mario Boella), another partner of the project located in Turin, presented the IoT platform in the context of MAESTRI project by providing insights on its main objectives and scenarios of application.
- Focus on LEAN Management – The advantages and cases of application of this strategy were explained in detail by Roberto Ronzani from LEAN Institute of Italy. His speech provided an overview of best practices and concrete applications of the LEAN approach in the industrial context and in process industries.
- Focus on Industrial Symbiosis – It was then the turn of Beatrice Marchi from the University of Brescia. Her intervention emphasised the opportunity that industrial symbiosis represent in circular economy, a virtuous approach aimed at reducing waste and develop eco-efficient enterprises.
- Focus on Project Management – Finally Pier Paolo Maggi from AICA spoke about the methods of Project Management in Industry 4.0, and also about certifications and undergoing transformations.

The workshop has been promoted by ASTER (the consortium representing the whole research and innovation system of the Emilia-Romagna region) through its weekly newsletter:

http://first.aster.it/aster_/myNewsletter?data=2018-05-03&userId=67e78c7168594a78a1a1bfdb7cbfe09ffc51baae&utm_source=nl20180503&utm_medium=mail&utm_campaign=aster



The first MAESTRI national workshop obtained the patronage of the Order of chartered engineers of Reggio Emilia. Additionally, the workshop has been accredited by the Order of chartered Chemistries as a continuing education activity for chartered professionals. This allows the participants members of the Order to obtain professional continuing education credits through the participation to the workshop.



Prot.n. 606 del 24/04/2018

Spett.le
SINERGIE
c.a. Vittoria Fontanesi
e-mail: ricerca@sinergie-italia.com

Oggetto: richiesta di patrocinio evento "Workshop Maestri Eco-Mentor Spectre"

Buongiorno,

comuniciamo che è stato concesso il patrocinio all'evento del prossimo 18 maggio pari
oggetto. In allegato il logo dell'Ordine.

Restiamo in attesa della locandina definitiva per la divulgazione agli iscritti.

Distinti saluti

IL PRESIDENTE

(Ing. Paolo Guidetti)



Poland

In 2018 Lean Enterprise Institute Polska planned workshops which main goal was to interest stakeholders in the subject of Maestri Training. In order to achieve this goal, two events were selected during which the overall concept of tools developed within Maestri project was presented as well as more detailed the training modules for Maestri Management System. General agenda for this (1-hour) presentation was as follow:

- a) Lean Management – general concept
- b) Lean Management tools
- c) The types of waste in production plants
- d) The goal of Maestri project
- e) Components of Maestri Total Efficiency Framework
- f) The tools developed within the Maestri project
- g) Construction and advantages of the "Eco Orbit View" training module
- h) Construction and advantages of the "Eco Lean Management Board" training module
- i) Construction and advantages of the "Problem Solving" training module
- j) Construction and advantages of the "Reflection Process" training module
- k) Invitation for 4 Maestri Training, that will be organized by LEIP

In order to reach an appropriate group of stakeholders two event were selected:

1. XXI Economic and Technical Conference of Heating Plants (20th June 2018)
 - a) Number of participants: 93
 - b) Type of participants: board members, managers, specialists

This event was selected because heating plans have significant impact on environment in Poland and only small number of them are familiar with Lean philosophy. In order to increase the awareness in the topic of sustainability among them this type of stakeholders was selected as the most desirable for Maestri Training.

2. Special training day organized by H2020 Regional Contact Point (21st June 2018).
Topic: Business Model Canvas in project proposal
 - a) Number of participants: 40
 - b) Type of participants: 13 people from universities and 27 from industry (ICT, electrical engineering, microbiology, law and debt collection company).

This event was selected in order to reach companies interested in new solutions and mostly this kind of participants are taking part in the events organized by H2020 Regional Contact Point. Maestri presentation was an information for participants of what kind of tools can be develop within H2020 projects.

The result of Maestri Workshop are the beginning of cooperation with two heating plant which will be a host of Maestri Training (ECO Tarnobrzeg and ZGC Tomaszów Mazowiecki) and the interest of other companies to be a part of this kind of training as a participants.



3.3.5. Stakeholder forums

In each partner country, a stakeholder forum will be organized after each project workshop, where a group of predefined stakeholders will be invited to further discuss, among other relevant issues:

- MAESTRI research methodologies;
- Architecture of the toolkits and IoT platform;
- Potentialities and limitations of the platform in real industrial environments and for specific activity sectors;
- Project outcomes and future research activities.

Each session will promote direct and proactive interactions between a group of invited stakeholders from process industries, academia, industrial associations and policy makers. A set of predefined questions will be presented to the participants, who will be asked to discuss them in groups, driven by a moderator. Opening out and exploring techniques, such as brainstorming, carousel or mind-mapping might be used.

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3.3.6. Networking with other R&D projects

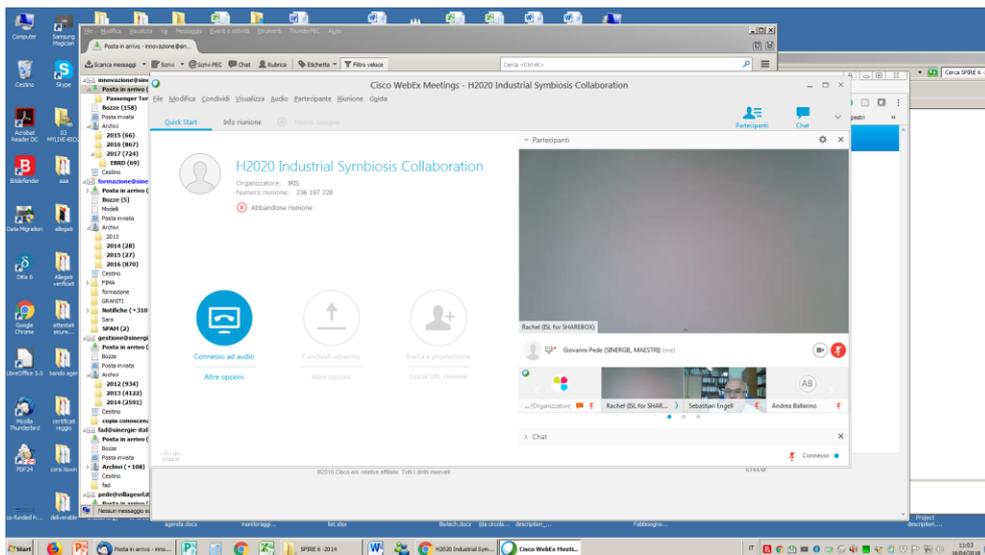
Contacts were already made with coordinators of SPIRE-04 projects addressing the development of resource efficiency and sustainability assessment tools, namely the projects MEASURE (Metrics for Sustainability Assessment in European Process Industries), SAMT (Sustainability assessment methods and tools to support decision-making in the process industries) and STYLE (Sustainability Toolkit for easY Life-cycle Evaluation).

Networking are already in place with the SPIRE-06 projects EPOS (Enhanced energy and resource Efficiency and Performance in process industry Operations via onsite and cross-sectorial Symbiosis), SHAREBOX (Secure Management Platform for Shared Process Resources) and SYMBIOPTIMA (Human-mimetic approach to the integrated monitoring, management and optimization of a symbiotic cluster of smart productions units). Marco Estrela (ISQ) and Maria Holgado (UCAM) were invited to be part of the **EPOS Advisory Board** and have participated in the first meeting that took place in March, 23th in Brussels. As part of cross-project learning, ISQ and UCAM were invited to participate in the EPOS Advisory Board meeting held in Brussels on 23/03/2017. Results of the first 18 months of EPOS project were presented with the opportunity to participants to raise questions / issues to be addressed in next months.

In April 2018, MAESTRI start clustering with other SPIRE projects in order to organise a common event. The project with which we are dialoguing are

- Paperchain (focus: Symbiosis with outputs from pulp and paper industry)
- CoPro (focus: integrated process control across factories in an industrial park to facilitate symbiosis)
- Inspire (focus: new business models for symbiosis)
- Scaler (focus: ecosystem of qualitative and quantitative tools for facilitating symbiosis)
- Fissac (focus: Symbiosis in the construction sector)

A first virtual meeting with the representative of these projects was held on the 16th of April 2018. Emil Lezal (IZNAB), Giovanni Pede (SINERGIE) and Marco Estrela (ISQ) participated to the meeting.



In May 2018, the Italian first national workshop was organised in Reggio Emilia. The MAESTRI workshop hosted sessions related to the presentation of results of other 3 projects: MONSOON (H2020 SPIRE), ECOMENTOR (ERASMUS+) and SPECTRE (FONDIMPRESA). The first project represent an advancement in the field of IoT in the industrial sectors while ECOMENTOR and SPECTRE represents projects connected to Industry 4.0.

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Participation to SPIRE dissemination events:

ISQ and UCAM also participated, presenting its results, to **1st SPIRE Thematic Workshop on Industrial Symbiosis, held in Brussels on the 30/03/2017** with the topic of Industrial Symbiosis (IS). The full-day workshop saw a morning session that gave industry perspectives on IS from representatives of SPIRE sectors including cement, steel, engineering, chemicals, water and ceramics. This session was concluded with an example of IS in action from the Smart Delta Resource initiative in Zeeland.

After lunch aspects of IS methodology were outlined by representatives of SPIRE projects MAESTRI, EPOS and SHAREBOX and the IS related objectives of the RESYNTEX project described. The workshop was concluded by an extended panel discussion examining how SPIRE can support the development of IS in its future activities.

The discussion and presentations brought out a number of key success factors for IS. The concept of IS is not new to many parts of the SPIRE community, but the need to spread and develop the concept between sectors to maximise resource and energy efficiency and develop the circular economy is clear. SPIRE projects are developing tools and collecting case studies that can help to identify IS opportunities and highlight benefits.

A crucial aspect in developing successful IS initiatives is establishing trust between the parties involved. Equitable sharing of risk and reward is needed to move projects forward and the use of facilitators to enable data sharing and communication can be useful. Regulatory issues can be a barrier to IS in particular through restrictions on cross-border trade in 'waste' and financing for implementing relatively small IS projects can also be problematic.

There is a clear role for SPIRE as a cross-sectorial platform to promote the uptake of IS across European process industry and beyond into wider manufacturing. The tools and portfolio of case study libraries that SPIRE projects are developing will be a very valuable assets to spread the word on industrial symbiosis, business cases and sustainable cooperative strategies so as to identify opportunities and initiate new material and energy flows.

MAESTRI has been inserted in the A.SPIRE website as well as in the related newsletters.

Furthermore, an invited session guided by the activities of MAESTRI was organised within the Sustainable Design and Manufacturing (SDM17) conference, held in Bologna, Italy, on 26, 27 and 28 April 2017. The session was entitled *Resource and Energy Efficiency for Sustainability Advances in Process Industries* and focused on contributions in the following areas:

- Challenges and barriers for energy and resource management in the process industry
- Lean management applications in the process industry
- Strategies for resource and energy efficiency in the process industry
- Tools and methods for continuous improvement in process industries
- Resource and energy efficiency assessment tools and methods
- Industrial Symbiosis applications in process industry
- Design tools for decision making in process manufacturing
- ICT and Internet-of-Things (IoT) applications for resource and energy efficiency
- Eco-innovative products, processes and services in process industry

The invited session attracted many contributions and 6 final papers were included for oral presentation: 3 from MAESTRI project, 2 from EPOS project and 1 from IMPROOF project. This resulted in fruitful discussions built on the work done within these three SPIRE projects.

In 2017, the last A.SPIRE event attended by ISQ was the '2017 EU PROCESS INDUSTRY CONFERENCE: A LOOK TO THE FUTURE' held in Brussels on the 19/09/2017.

MAESTRI participated to the ACHEMA 2018 fair in Frankfurt, Germany. MAESTRI, jointly with other SPIRE projects was hosted at the A.SPIRE stand.



ACHEMA fair is an international exhibition on chemical engineering, process engineering, environmental protection and biotechnology that is held every 3 years in Frankfurt am Main (Germany). This year it was organized from 11 to 15 June and next time it will be in 2021.

The audience of ACHEMA usually includes only professional visitors and can be considered as the leading event for highly complex and process industries. For this reason, it represents the ideal networking platform for small and medium enterprises, large multinational corporate groups, family business or small start-up companies as well as large-scale industries.

This year ACHEMA welcomed about 3813 exhibitors and 166000 visitors from over 50 different countries to present new products, process and services to professionals in the sector.

10 SPIRE projects were present as exhibitors with a dedicated group stand, where they could show to interested visitors and stakeholders the results achieved, in order to promote and disseminate on the projects:

- MAESTRI
- Monsoon
- Sharebox
- CoPro
- IbD
- Romeo
- Recoba
- Prodias
- Propat
- Inspire Water

3.3.7. Interviews

Within Work Package 4 “Industrial Symbiosis”, initiated by UCAM in December 2015, the analysis of the State-of-the-Art was undertaken through the identification of an initial set of research gaps and challenges for the implementation of Industrial Symbiosis in process industries.

In order to complement the academic review, a suite of practitioner interviews to relevant stakeholders has been performed, encompassing both companies within MAESTRI and others who are not presently involved. These interviews helped provide insight into practitioner’s current understanding and engagement with Industrial Symbiosis and elicit challenges to be addressed in future MAESTRI activities.

Short interviews were undertaken by UCAM during March, April and May 2016. The scope of the interviews is broad in terms of countries involved and characteristics of the companies (size, sector and stage in symbiotic exchanges implementation) in order to provide a wider perspective on challenges that may arise in MAESTRI industrial cases at later stages, and help enhance the wider applicability of the tools and concepts.

3.3.8. Demonstration

Demonstration of project results will be achieved through the provision of Total Efficiency Framework training courses to industrial community.

These courses will be based on the previous developed training modules which were provided to the MAESTRI industrial pilots and will be oriented to teach the industrials to use MAESTRI managerial tools and methodologies.

The courses will be addressed two target groups inside the industrial community, middle management and top-management. Then, two different courses will be organized as class lessons and will be left open for the participation to all industrials sectors.

At least 20 training sessions will be provided during the project, 2 of each training courses will take place on the 5 MAESTRI countries. It is expected 20 persons per course.

Training activities has already started in Italy and Poland:

- 38 professionals (employee or self-employed) in Italy. 38 professionals who participated to the national workshop have gained professional continuing education credits and certificates of attendance have been issued;



- 40 people participating to the second event in Poland have been trained on business models.

3.3.9. 14th innovation event promoted by COTEC

The MAESTRI project was represented at the 14th innovation event promoted by COTEC (Portuguese enterprise association for innovation), which was dedicated to the circular economy theme. ISQ team present had the opportunity to present the project to the President of the Portuguese Republic.



ISQ team with the President of Portugal at COTEC

3.3.10. XVI Symposium Luso-German

On the 4th of July 2017, the German-Portuguese Chamber of Commerce with the support of the German Federal Ministry of Economy and Energy, organised in Lisbon the XVI Symposium Luso-German of Energy "Energy efficiency including renewable energies, in Industry". Antonio Baptista participated to the event presenting MAESTRI with a speech titled: "The relevance of Energy Efficiency within Industry 4.0". The presentation has been published on SlideShare:

<https://www.slideshare.net/AntnioBaptista/simposio-luso-alemo-energia-jul-2017>

During this event, MAESTRI has been presented to industries and governmental stakeholders.

3.3.11. MAESTRI recognised as a best practice by ISPRA, the Italian Institute for Environmental Protection and Research

In Italy, the government body for environmental protection and research ISPRA has been involved. ISPRA recognised MAESTRI within its database of environmental and sustainability best practices in the field of industrial production and published an information sheet on MAESTRI. ISPRA's database of best practices is named GELSO and is reachable through this link:

<http://www.sinanet.isprambiente.it/gelso/banca-dati/soggetto-privato/sinergie/maestri-resource-and-energy-efficiency-for-process-industries>

ISPRA's database is used by several categories of MAESTRI stakeholders, such as policy makers, industries and researchers.

The screenshot shows a web browser displaying the MAESTRI website. The URL is www.sinanet.isprambiente.it/geiso/banca-dati/soggetto-privato/sinergie/maestri-resource-and-energy-efficiency-for-process-industries. The page title is "GELSO - Gestione Locale per la SOstenibilità ambientale". The ISPRA logo is visible in the top left. The main content area includes an abstract for "MAESTRI Resource and energy efficiency for process industries" and a list of 4 pillars of the project.

MAESTRI Resource and energy efficiency for process industries

Abstract
Scopo del progetto MAESTRI è supportare la sostenibilità delle industrie manifatturiere europee. Ciò è possibile grazie ad un sistema di gestione basato su una piattaforma flessibile e adattabile che permetta di guidare e semplificare l'implementazione di un approccio innovativo, il Total Efficiency Framework. Obiettivo generale è quello di incoraggiare la cultura del miglioramento continuo nelle aziende, sostenendo i processi decisionali, supportando lo sviluppo di strategie migliorative e aiutando nella definizione delle priorità al fine di migliorare le performance generali dell'azienda. Il modello è stato validato in 4 imprese produttive di medie dimensioni appartenenti a settori differenti.

La prospettiva del ciclo di vita, centrata sui modelli di simulazione dinamica e ottimizzazione, di sistemi singoli e complessi, per comprendere al meglio i processi e le opportunità che apportano valore all'impresa. Questo approccio, basato sul life cycle evita che i problemi passino da una fase all'altra del ciclo di vita.

L'approccio MAESTRI unisce diversi metodi e strumenti valutativi. L'obiettivo generale del Total Efficiency Framework è quello di generare miglioramenti continui e aumentare l'eco-competitività favorendo la sostenibilità nelle operazioni di routine.

4 pilastri principali del progetto:

1. Sistema di gestione efficace rivolto al miglioramento continuo dei processi
2. Gli strumenti sono realizzati per valutare l'efficienza complessiva e definire le strategie di miglioramento e ottimizzazione per sostenere i processi decisionali
3. Integrazione con strumenti per la simbiosi industriale centrate sullo scambio di materiali ed energia
4. Una piattaforma software basata su Internet of Things (IoT) per semplificare il concetto di implementazione e assicurare un controllo integrato dei processi di miglioramento.

Commento
Partner
ISQ - Instituto de Soldadura e Qualidade (Portogallo), (Capofila), Istituto Superiore Mario Boella (Italia), Lean Enterprise Institute (Polonia), IZNAB (Polonia), Worlee (Germania).

3.3.12. Knowledge exchange with other industries

With reference to activities with other industries, Worlee representatives were invited to visit Carlsberg company located in Poland, as a part of Eco Lean Management Board implementation process performed together by Lean Enterprise Institute from Poland and Worlee company from Germany. The visit took place on 19 April 2018 in Brewery Bosman (Carlsberg group) located in Szczecin. LEIP accompanied Worlee in the visit.

Agenda:

19.04.2018 Worlee visit in the Carlsberg factory

8:00 – Kick off
8:15 - 8:45 – PMS – Packaging department level (meeting)
 8:45 – 9:15 – short discussion after meeting
 9:15 – 10:00 - brewery introduction
 10:00 – 11:00 – PMS (brewing & processing) – visiting 2 boards
11:00 – 11:30 – PMS – Plant Manager level (meeting)
 11:30 – 12:30 – PMS – how PMS has started in Carlsberg Poland
 12:30 – 13:00 – lunch
 13:00 – 13:50 – discussion
13:50 – 14:00 – PMS line level (meeting)
 14:30- summary & closure

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Brewery Bosman is really experienced in Lean philosophy. They have been implementing Lean tools and methods for many years, building employees competency and commitment.

Worlee using Carlsberg's experience set following purposes of the visit:

- To see how the Management Boards work in a different level of the organization
- To see structure and content of the Management Board in a shopfloor, middle management and top management levels.

- To see what type of indicators were selected in a cascading process and to see the correlation between different levels of the KPIs
- To know how to implement Eco Lean Management Board
- To know what kind of benefits they should expect
- To know what troubles might be expected

Worlee could see in practice how the boards and operational meetings work. They saw Packing Department board, Brewing & Processing boards, Top Management board and operator's board. They observed three operational meetings in different departments. Each time they had an opportunity to discuss with the team members about meeting rules, information flow, escalation process and key aspects of the implementation.

Visit ended with the feedback session given to the Carlsberg factory. Based on this session, it was possible to conclude, that both companies – Worlee and Carlsberg were beneficiaries of this visit. Experiences gathered during the visit allowed them to look at their own processes from a different perspective.



3.3.12. Tools testing

Within Work Package 4 “Industrial Symbiosis”, initiated by UCAM in December 2015, a reduced version of the prototype library of case studies and linked exchanges database developed within Task 4.2 “Library of case studies and open source database of waste” was made available through the MAESTRI website for an initial testing.

A “Symbiosis Space” webpage was created to introduce the main concepts and activities carried out in the task, including links to both the library and the database reduced versions.

The testing of the prototype was done as follows. The “Symbiosis Space” featured a link to an online form (developed using Google Forms) to gather feedback on the structure and content of the webpage, the library and the database. Such feedback was then used to improve the tools developed.

An invitation to test the prototype tools and complete the feedback form was sent by UCAM to MAESTRI industrial partners and by UCAM and other MAESTRI partners to external companies not presently involved in the project. In addition, the invitation was also sent for further diffusion to several National Centres for Cleaner Production and other industrial clusters/associations.

4. Stakeholder engagement work program

Stakeholder engagement		Year 1				Year 2				Year 3				Year 4			
	Activity	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16
Website	Launch																
	Dissemination mailings																
	Regular updates																
Newsletters	Biannual newsletters																
Social-media	Social medias																
	Videos (website, youtube)																
Web portal	Launch																
	Regular updates and notification to registered users																
Interviews	Interviews to process industries																
Workshops	Portugal																
	United Kingdom																
	Italy																
	Germany																
	Poland																
	International conference in Portugal																
Stakeholder forums	Portugal																
	United Kingdom																
	Italy																
	Germany																
	Poland																
Demonstration (training sessions)	4 in Portugal																
	4 in United Kingdom																
	4 in Italy																
	4 in Germany																
	4 in Poland																
Networking	Contacts with SPIRE-06 projects for definition of further networking activities																

5. Concluding Remarks

Stakeholder engagement activities developed in the first three years of MAESTRI, included the launch of the project website and the presence in social media networks. In the third year it has been particularly important the collaboration with external key actors in order to reach a broader pool of stakeholders through dissemination activities. In particular, this has been:

- Other EU and National projects, in particular other SPIRE projects;
- A.SPIRE to organise common dissemination events;
- Chartered professional organisations, to increase the effectiveness of communication addressed to certain types of stakeholders (e.g. professionals).

For the last year of the project it is foreseen to continue this kind of collaboration with stakeholders in order to effectively conclude the most important dissemination tasks: the realisation of training courses and the organisation of the final conference in Portugal.

References

[1] Stakeholder Engagement Handbook, "*Best practice guidelines for stakeholder engagement in research projects*", BiodivERSA, Paris, 2014.