

LAYMAN REPORT

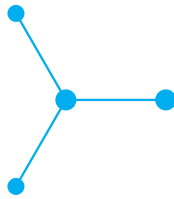
Full
• **material and
chemical monitoring**
data and disclosure
for the protection
of the human health
and environment



MATHER is a Life project that aims at designing and developing a highly innovative ICT tool to collect, monitor and make accessible and interoperable chemical data used in mass market products (like home appliances) including tracking of current and future EU regulations in the field of chemicals and environment, such as RoHS and REACH.

PROJECT

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1. PROJECT PARTNERS



Whirlpool Corporation is the world's leading kitchen and laundry appliance company, with approximately 77,000 employees and 59 manufacturing and technology research centers in 2019.

Whirlpool EMEA is the coordinator of the MATHER project. Throughout the project Whirlpool coordinated the consortium and has been a point of reference for the several activities.

Whirlpool also provided the requirements for the MATHER tool, production process data and data on products and components. In addition, he validated the tool with a sample of his products.



National Technical
University of Athens

The National Technical University of Athens, thanks to the Industrial Process Systems Engineering unit, was responsible for the development of the MATHER platform and the integration of the databases. During the project, the IPSEN team has provided its know-how for the integration of the principles of Life Cycle Assessment and the environmental impact of chemicals.



T2i-Technology Transfer and Innovation is the innovation agency participated by three major Chambers of Commerce of North-East Italy (Treviso-Belluno, Venezia-Rovigo and Verona).

t2i is a non-profit research organisation and its services include: development of innovation driven projects, IPR strategy and management, lab testing and certifications, training and skill developments, start-ups incubation.

In the MATHER project t2i dealt with the replicability of the project, involving other companies and stakeholders for the validation of the instrument. It also dealt with the analysis of the socio-economic impacts of the project and the dissemination and communication of the results.

2. BACKGROUND TO THE MATHER PROJECT

As stated by ECHA (European Chemical Agency),

chemicals are the building blocks of life.

They are present in us, all around us, and in every product we buy. Human beings and animals are made of chemicals; cooking food is all about chemistry; the drugs that prevent and treat illnesses are made of chemicals; and even the sun that enables life on earth is made of chemicals.

Chemicals are both naturally occurring and man made. Life would not exist without them. However, the use of

substances with certain hazardous properties can be of concern for human health and/or the environment.

3. PROJECT OVERVIEW

3.1 Objectives

The acronym MATHER stands for *full MATerial and cHEmical monitoRing data and disclosure for the protection of the human health and environment*.

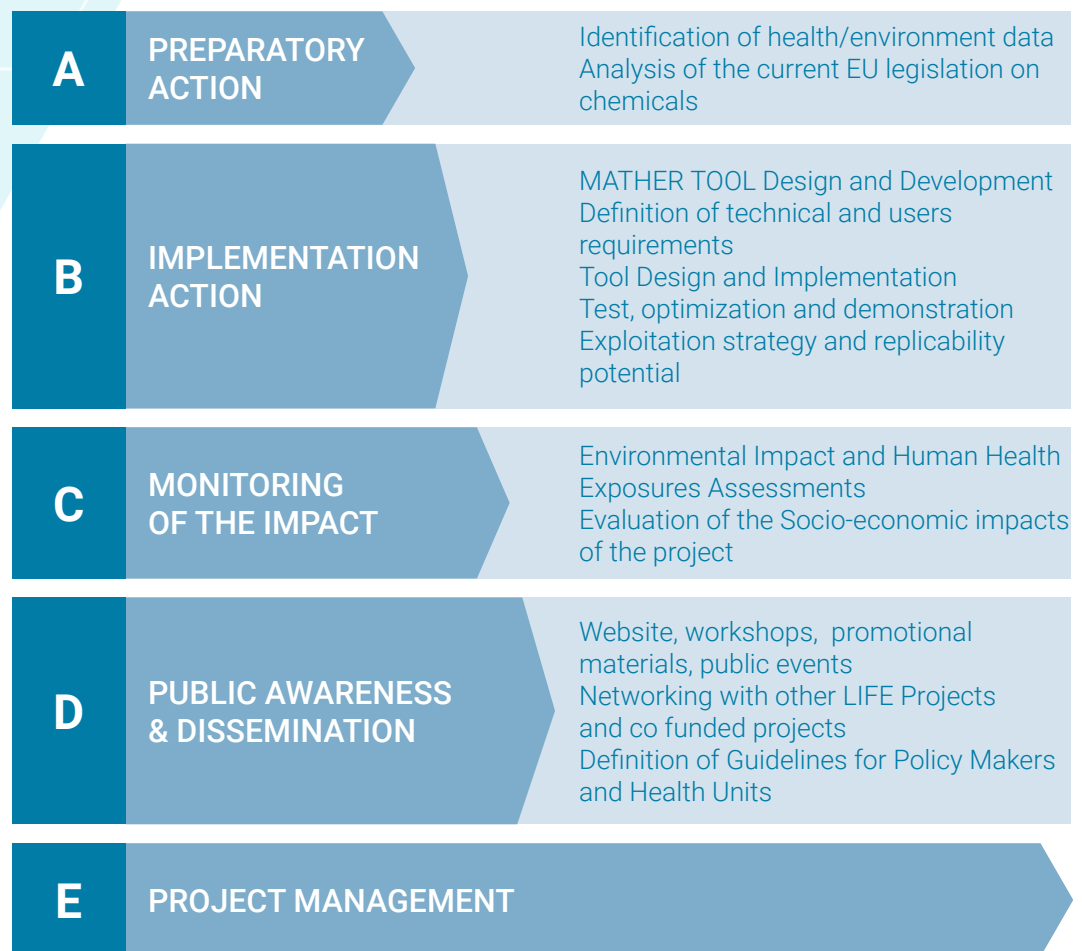
The main objective of the project was indeed to design, implement and demonstrate a new data monitoring tool that could create an interconnection between the list of materials used by a company in its products with the impacts on the environment, health and in relation to European regulations on the subject.

An ICT tool, therefore, materialized in a platform, that makes chemical monitoring data available, accessible and comparable, allowing the assessment of exposure to chemicals.

From the very beginning of the project, the benefits that the new system would bring to the company were identified and more stakeholders were involved:

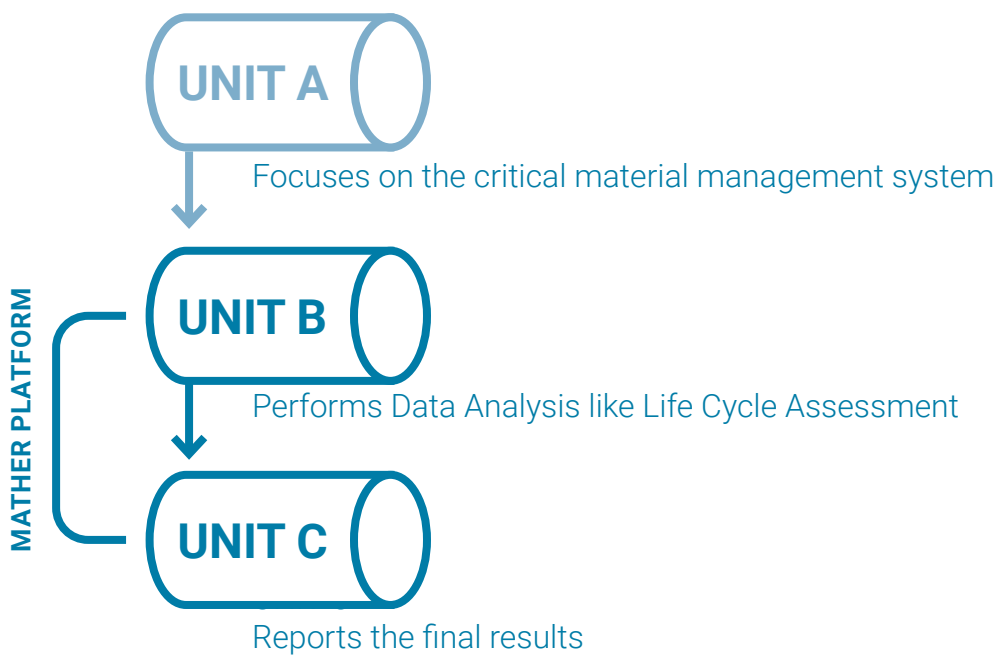
- **Spreading awareness**
Enhancing the consciousness of human and environmental impacts of materials and chemicals used in purchased components for own products to sustain a more informed decision making about materials and components selection, during products design and production
- **Providing data**
A valuable source of information and data for health units about the exact composition of products / tools / machinery and their quality, as well as possible environmental and human health impacts.
- **Reducing costs**
Highly reducing internal costs, related to the continuous updating of materials databases and dramatically reducing the time-to-compliance with regulations of products before accessing the market
- **Supporting change**
supporting companies and policy makers in a more conscious selection and use of chemicals in products and guaranteeing the prompt implementation of EU policies&directives related to chemicals in EU products and production processes

3.2 Actions overview



3.3 The Life Mather tool - tool conceptual design

The Mather tool consists of 3 Units



The **Mather Platform** integrates Unit B and C

The Platform Features

Data availability

- Incorporated products
- Able to handle large volumes of data streams
- Automatic and customized database search
- Easy access to assemblies (based on BoM and FMD data)

Impact assessment

- Calculation of Midpoint and Endpoint Indicators
- Graphical representation of results

Unique features

- **IPChem (Information Platform for Chemical Monitoring) direct connection:** Knowledge on chemical exposure and its burdens on health and environment
- **Substitution of substances/materials** due to current and/or future restrictions: Based on material properties

MATHER Tool added value

Using the tool allow to have:

- Centralized database: sending, receiving, processing, and storing material compliance data of products
- Validation of information submitted by suppliers and determination of compliance the part level
- Validation of the tool performed for variety of home appliances products on food processing and preservation, clothes cleaning
- Many different materials included: packaging, paints, insulation, plastic, refrigeration agents etc..
- BOMs&FMD data are well organized and levelled even for complex products
- User friendly interface and clear output (can be used by different departments/function within company)
- Substitution function: 1) allows to plan ahead materials alternatives, 2) help to prepare proactive strategies to comply with foreseen and/or changing regulations
- Architectural design of the tool provides flexibility to accommodate future changes

3.4 Project socio-economic impact

<p>Competitive advantage for companies with MATHER tool</p>	<ul style="list-style-type: none"> Reduction of time and cost for Life Cycle Assessment Reduction of costs related to the purchase of not compliant material and immediate indication for replacement Full transparency of the supply chain (suppliers' direct input into the platform) Reduction of time and cost and immediate access to Environmental Product Declaration Immediate access to GRI Standards and Sustainability Reporting Early identification of normative change
<p>Impact on health with MATHER tool</p>	<ul style="list-style-type: none"> Direct reduction of use of critical chemical materials Contribute in the reduction of Global Warming Potential Contribute to the reduction of risk of various pathologies i.e.: anemia, nerve disorders, encephalopathy, miscarriage, cancer, endocrine disruptors, altering human hormonal, diabetes, cardiovascular disease, high blood pressure
<p>Challenges to increase socio - economic impact with MATHER tool</p>	<ul style="list-style-type: none"> Looking for a transparent supply chain Suppliers motivation on using recycled materials

3.5 Replicability and Dissemination

Project's communication and awareness raising activities were addressed to companies from different sectors, to the general public of consumers, to EU and national Policy Makers and to local Health Units.

These action aimed at highlighting the importance of the monitoring of hazardous chemicals in products to the targeted audience, in order to create a network over the topic and to promote interest. As a matter of fact, replicability actions of the project were strictly linked to dissemination activities and MATHER project results have been spread throughout several national and international workshops and events (such as the "Green Week" in Bruxelles), local fairs and conferences, webinars and 1-to-1 meetings with interested companies and stakeholders.

A significant part of the replicability activities was the demonstration of the tool itself: instructive leaflets with the link to the platform have been distributed in order to encourage testing the software and to highlight its simplicity and yet importance.

4. EUROPEAN ADDED VALUE



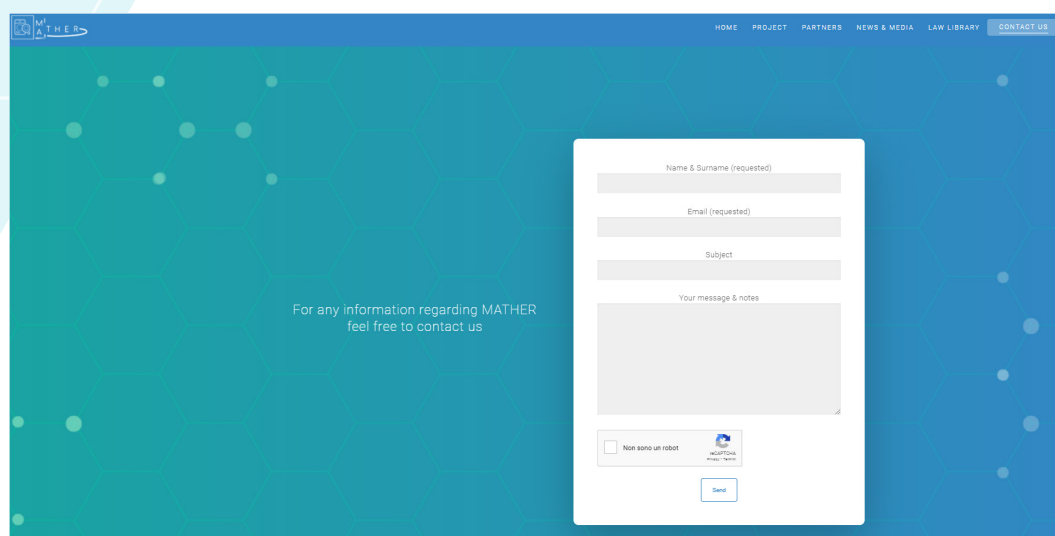
Having resonance at European level, for the MATHER project, represents an important opportunity to deal with various targets of **companies**, but also with **policy makers** and **health units**. In addition, the project's objectives take up some of the priorities for the EU in terms of environment, health and monitoring of hazardous substances.

In order to provide sound and concrete inputs to policy makers and Health Units to update regulations related to products and industrial processes, the LIFE MATHER Project defined guidelines and roadmaps to:

- Make **POLICY MAKERS** aware of the project outcomes to enable the updating of their policies, regulations, strategies with respect to the current environmental, economic and social framework
- Make **HEALTH CARE SYSTEM** aware of project outcomes for assessing symptoms, causes and find appropriate treatment approaches against health diseases induced by exposure to chemicals
- Highlight the importance of a good communication pathway among all the interested stakeholders in order to guarantee synergies, collaboration and exchange of useful information.

5. CONTACT AND FURTHER INFORMATION

<http://www.matherproject.eu/contacts/>

A screenshot of the MATHER project website's contact page. The page has a blue header with the MATHER logo and navigation links: HOME, PROJECT, PARTNERS, NEWS & MEDIA, LAW LIBRARY, and CONTACT US. The main content area is dark blue with a white contact form on the right. The form includes fields for 'Name & Surname (requested)', 'Email (requested)', 'Subject', and 'Your message & notes'. Below the form is a checkbox for 'Non sono un robot' and a 'Send' button. On the left side of the form, there is a text prompt: 'For any information regarding MATHER feel free to contact us'.

The **LIFE Programme** (<http://ec.europa.eu/environment/life/>) is the EU's funding instrument for the environment and climate action. The general objective of LIFE is to contribute to the implementation, updating and development of EU environmental and climate policy and legislation by co-financing projects with European added value. LIFE began in 1992 and to date there have been five complete phases of the programme (LIFE I: 1992-1995, LIFE II: 1996-1999, LIFE III: 2000-2006, LIFE+: 2007-2013 and LIFE 2014-2020). During this period, LIFE has co-financed more than 5,400 projects across the EU. For the new approaching programming period, the European Commission proposes to raise the budget of the LIFE programme to €5.4 billion between 2021 and 2027. The new LIFE programme would have four sub-programmes: nature and biodiversity; circular economy and quality of life; climate change mitigation and adaptation; and clean energy transition. The European Commission manages the LIFE programme through its services Directorate-General for Environment and Directorate-General for Climate Action, and its Executive Agency for Small and Medium-sized Enterprises (EASME).