One million and one labs

HIGHLIGHTS

1000001 Labs is a research and innovation SME based in Barcelona, Spain.

We build solutions based on artificial intelligence, standards and interoperability to:

- predict the evolution of ecosystems
- improve environmental management systems
- improve quality control in citizen science

We empower citizen science via:

- rich graphical interfaces
- dissemination in education

1000001 Labs (one million and one labs, 1M1L) is a leading SME for intelligent, machine analysis of citizen-science data. It is specialized in advanced systems of decision support, recommendation, personalization and internet of things applied to the environment domain.

Its research and innovation staff includes the principal investigator and coordinator of the Citclops project, a 5M€ European project about a citizens’ observatory for coast and ocean monitoring, and also includes software engineers and researchers who participated in various other European projects, and experts in the area of internet of things.

1000001 Labs is a member of the Board of Directors of the European Citizen Science Association (ECSA). 1000001 Labs represents the European Citizen Science Association in the liaison among ECSA, ACSA and CSA via a common Data and Metadata Working Group. The purpose of this working group is to support, advance, and facilitate data interoperability among ontologies, projects and data repositories, and promote collaboration via the development and improvement of international standards for data and metadata. In its continuous effort to disseminate citizen science, 1000001 Labs has recently joined the ECSA Learning and Education in Citizen Science working group.

Ontologies, standards and interoperability

1000001 Labs is developing a service that monitors environment quality for the aquaculture industry. The service is designed to combine information from in-situ monitoring stations, Earth-observation satellite data, biological and physical oceanic models, and citizens. 1000001 Labs is also leading the design of a marine-monitoring offshore lab (Andromeda).

The data interoperability framework proposed by 1000001 Labs, in collaboration with SINTEF, CSIC, CREAL and other organizations, is based on an ontology mapping, with a citizen-science ontology and an enhancement of the ISO 19156 / OGC Observations and Measurements model for the support of citizens-science observations in synergy with the GBIF vocabulary, where the enhancements of ISO 19156 is proposed as a future ISO/TC 211 standard revision. The service interoperability is based on an open service-architecture, following the principles of the August 2015 revision of ISO 19119 Geospatial services and CEN/TC 287 Spatial Data Infrastructure (CEN/TR 15449-1-4:2012). The architecture is based on the EC’s Future Internet service principles with RESTful and web services.

Predict the evolution of ecosystems

1000001 Labs allows automatically detecting patterns across data. Users can zoom in and out using a visual timeline to spot trends and spikes, and respond to important events, as they occur. 1000001 Labs provides support in classification, decision making, prediction and recommendation: users can automatically discover knowledge from citizen-science data, adding context and meaning to these data by identifying, naming and tagging fields and data points.

1000001 Labs enables any user to automatically discover relationships in the data, define data models that describe them, and build powerful reports. It also enriches results integrating information from external open-access databases.

Improve environmental management systems

1000001 Labs allows alerts and threshold conditions to be used to monitor environmental systems. By applying artificial-intelligence tools, the observing systems where data come from become more efficient and users have access to added-value information.
Improve citizen science and empower citizens

1000001 Labs has expertise in engaging and retaining citizens in activities of citizen science, with emphasis not only on data collection, but above all on information analysis and its delivery to end users.

With an increasing number of citizen-based initiatives, a coordinated approach for the integration of citizens’ observation systems is becoming necessary as a key support tool for decision makers involved in the management of domains such as the environment, disaster risk and emergency. Decision support is indeed strategic for a coherent approach that allows benchmarking and pinpointing best practices, identifying barriers and synergies, promoting standards, facilitating integration and stimulating uptake by public authorities.

1000001 Labs coordinates initiatives in the urban symbiosis, energy, water, ecosystems, and biodiversity areas. Data are collected from wherever they are generated, including physical, virtual and cloud environments, in order to monitor and analyze them in real time, gaining operational intelligence with critical insights. Intuitive interfaces guide the user through previewing and preparing data for further research and analysis.

Dissemination and educational workshops are part of 1000001 Labs day-to-day activities. We highlight our activities in the Barcelona Citizen Science Day, Sonar+D, Hack The Expo, and with the Barcelona Maker Community.

<table>
<thead>
<tr>
<th>Some of the calls in which 1000001 Labs is interested in participating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizon 2020 - Work program 2016-2017</td>
</tr>
<tr>
<td>SC5-18-2017</td>
</tr>
<tr>
<td>SwafS-11-2017</td>
</tr>
<tr>
<td>SCC-02-2016-2017</td>
</tr>
</tbody>
</table>

Our values

Project focus
- Partner in European projects and expertise in preparing successful project proposals
- Fast decision-making
- Solutions to generate explicit knowledge from the tacit knowledge in the data (Water Trends)
- Expertise in interoperability

Innovation
- Development of prototypes (Hydroino)
- Participation in national and international networks of experts and in standardization initiatives
- Innovative solutions for societal benefits

Experience and reliability
- Team of international, experienced and competent staff
- Experience in the environment, education and personalized healthcare domains
- Industry-leading SME in citizen science and artificial intelligence

Integrity
- Ethics as a core part of business plans
- Strong corporate social and environmental responsibility policies
- Democratic participation according to a cooperative model

Key research facilities, infrastructure and equipment

1000001 Labs is developing Andromeda, which will be the first marine monitoring hackerspace. It has been designed together with CSIC and Plàncton to support local decision making related to aquaculture.

Member of the European Citizen Science Association

LOCATION

cc. Alzina 52
Barcelona 08024
Spain

CONTACT US

hello@1000001labs.org

VISIT US

www.1000001labs.org

BLOG

Follow our activities
1000001labs.org/blog

FACEBOOK

Give us a Like and read about us on your timeline!
/1000001labs

TWITTER

Become a follower!
@1000001lab

LINKEDIN

Join our network and stay in touch!
/company/1000001-labs

BLOG

Follow our activities
1000001labs.org/blog

VISIT US

www.1000001labs.org

Some of the calls in which 1000001 Labs is interested in participating

<table>
<thead>
<tr>
<th>Horizon 2020 - Work program 2016-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC5-18-2017</td>
</tr>
<tr>
<td>SwafS-11-2017</td>
</tr>
<tr>
<td>SCC-02-2016-2017</td>
</tr>
</tbody>
</table>