## Position open: senior software engineer (Java and Javascript)

The Basque Centre for Climate Change (BC3) is building a software task force to support its strategic activities related to collaborative, integrated data science and modeling on the semantic web. The position advertised here is for the first member of this team, which is expected to expand in the next years.

As a software engineer, you will contribute to the development and maintenance of the **k.LAB software stack**, a semantic web infrastructure that uses artificial intelligence to build computational solutions to environment, policy and sustainability problems. The open source k.LAB software includes both client and server components that connect data and models from distributed repositories, guided by machine reasoning over a set of shared ontologies. This technology, based on machine reasoning, machine learning, distributed computing and high-performance, multi-disciplinary and multi-paradigm system modeling, is the flagship product of the **Integrated Modelling Partnership** (http://www.integratedmodelling.org/) which is expected to serve a growing number of worldwide users (from academia, governments, NGOs and industry) in the years to come.

During the first year, you will work closely with the main system architect and implementer, with the aims of bringing the currently alpha-stage software to a stable, well-documented and feature-complete version 1.0. Your responsibilities will be a subset of those identified below, according to experience and skill set. As the team expands, we expect more specialization of roles, with a potential redefinition of responsibilities towards roles of coordination and team leadership.

**Key Responsibilities:**

- Collaborate to developing, strengthening and debugging the back-end and/or the client components of the k.LAB software stack (including a semantic web node server, a modeling engine, an Eclipse-based modeler IDE and a web-based interface for end users).
- Collaborate to the definition of unit tests and code review policies for both k.LAB and the associated data/model products.
- Participate in all aspects of the development life cycle including analysis, design, development, documentation, release and deployment.
- Communicate and coordinate with both technical and non-technical stakeholders.
- Collaborate to the administration of the core network components of the k.LAB network in support of active projects (such as ARIES: http://aries.integratedmodelling.org).

**You should have:**

- Strong analytical skills and an ability to learn quickly and to think outside the box. Our work is very innovative and you should expect your job to be as

intellectually challenging as rewarding. A strong motivation and a desire to learn and explore new technologies are a must.
- A degree in computer science (or similar), or very good reasons not to have one!
- Great communication skills, including a very good knowledge of the English language both written and spoken. Most of our communication is in English although knowledge of Spanish and/or Italian will be an asset.
- An understanding of artificial intelligence, in particular knowledge representation, formal semantics and machine reasoning.
- A working knowledge of geomatics (OGC services etc.) and dynamic system modelling.
- An ability to work independently on projects and issues, with projects that include multiple and diverse technologies and scope.
- An ability to work with a diverse, multi-location and multi-lingual team.

**Three or more years of experience in as many as possible of these technologies:**

- 3+ years of experience in developing Java and JavaScript software, with mature design, coding, testing and debugging skills in a JVM environment, but also comfortable and happy to work in a multi-language environment.
- Full fluency with Git and Maven technologies across the entire build-test-release cycle.
- Experience with an agile development process with industry-standard issue tracking, continuous development and deployment (BC3 uses the Atlassian toolchain: Jira, Bamboo, Confluence).
- Experience in designing and implementing high-performance REST service APIs and back-ends, preferably with Spring.
- A firm grasp of modern web technologies and experience with progressive Javascript framework, ideally Vue.js.
- Knowledge and experience developing with and for the Eclipse environment.
- Experience building and delivering “big data” solutions in a production environment (handling large data-sets or working with Hadoop, HDFS and Apache Spark).

**Location:** Basque Centre for Climate Change (BC3), Bilbao, Spain.

http://www.bc3research.org

BC3 is an internationally recognized research center on climate change, with a multidisciplinary team of high-profile researchers, aims to foster the creation of knowledge with a multidisciplinary scientific approach in order to support better decisions for a more sustainable society.

**Tenure:** The position will be for a period of one year (full time) starting in February 2018, with a probation period of 3 months. The contract is renewable for a total period of 3 years upon satisfaction of both parties. We expect the IM Partnership to provide conditions for continued employment beyond this term, potentially with higher

leadership responsibilities, if the performance grants it. Applications from freelance programmers are welcome.

**Salary:** The position will carry competitive salaries according to the professional profile of the applicant and excellent conditions of work including 30 days of leave per year (beyond national holidays) and the possibility of teleworking a number of days (to be decided) per month.

Interested candidates should send their application (CV preferably in English, motivation letter and names and full contact details of two referees) by electronic mail to hr@bc3research.org, including the words “IM developer” in the subject. Informal enquiries can be made to Prof. Ferdinando Villa (Ferdinando.villa@bc3research.org), Javier Martinez Lopez (javier.martinez@bc3research.org) and Stefano Balbi (stefano.balbi@bc3research.org). All information received during this process will be handled confidentially.