



# OSSMETER

***OSSMETER will extend the state-of-the-art of automated analysis and measurement of open-source software, and develop a platform that supports decision makers in the process of discovering, comparing, assessing and monitoring the health, quality, impact and evolution of open source software.***

## AT A GLANCE

**Project title:**

Automated Measurement and Analysis of Open Source Software

**Project reference:**

318736

**Project coordinator:**

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UNITED KINGDOM

**Partners:**

*University of York, (UK)*  
*Centrum Wiskunde & Informatica, (NL)*  
*University of L'Aquila, (IT)*  
*University of Manchester, (UK)*  
*Tecnalía, (ES)*  
*Softeam, (FR)*  
*UNINOVA, (PT)*  
*Unparallel Innovation, (PT)*

**Duration:**

30 months

**Total cost:**

€ 3,40M

**Website:**

[www.ossmeter.eu](http://www.ossmeter.eu)

## Key Challenges

Deciding whether open source software (OSS) meets the required standards for adoption in terms of quality, maturity, ongoing development activity and user support is not a straightforward process. It involves exploring various sources of information including source code repositories to identify how actively the code is developed, how well the code is commented, and level of testing, but also the supporting elements such as communications through newsgroups, forums and mailing lists to identify whether questions are answered in a timely manner, or the number of experts and users of the software, how many open bugs and how fast they are fixed, and many others.

It becomes even more difficult to discover and compare several OSS projects that offer similar functionality, and to make an evidence-based decision on which should be selected. Even when a decision has been made for the adoption of a particular OSS product, decision makers need to be able to monitor whether the OSS project continues to be healthy, actively developed, and adequately supported in order to identify and mitigate in a timely manner any risks emerging from a decline in OSS quality indicators.

## Technical Approach

Previous work in the field of OSS analysis and measurement has mainly concentrated on analysing the source code behind OSS software to calculate quality indicators and metrics. OSSMETER aims to extend the scope and effectiveness of OSS analysis with novel advances in language-agnostic and

language-specific methods for code analysis, while also introducing state-of-the-art Natural Language Processing (NLP) and text mining techniques such as question/answer extraction, sentiment analysis and thread clustering to analyse and integrate relevant information extracted from surrounding communication channels (newsgroups, forums, mailing lists), and bug tracking systems supporting OSS projects. These additional elements will provide a more comprehensive assessment of the quality of OSS projects and facilitate better evidence-based decision making and monitoring. OSSMETER also aims at providing meta-models for capturing the meta-information relevant to OSS projects (e.g. types and details of source code repositories, communication channels and bug tracking systems, types of licences, number of downloads etc.), and effective quality indicators, in a rigorous and consistent manner enabling direct comparison between OSS projects. These will be integrated into an extensible cloud-based platform enabling users to discover and compare OSS projects, which can also be extended to support quality analysis and monitoring of in-house software development projects.

### Expected Impact

Identifying and reusing high quality OSS instead of implementing in-house solutions

with similar functionality enables industries to concentrate on delivering innovative features. OSSMETER advances will allow adopters of OSS to make more informed and confident decisions about the OSS software they build upon. By automatically classifying OSS projects, OSSMETER will enable adopters to discover new cutting edge OSS projects related to their area of interest.

The project is targeting a 30% reduction in the effort needed to assess the quality of source code of an OSS project through new analysis facilities, a 90% reduction in the effort needed to assess the quality of OSS support provided through surrounding communications channel, and a 90% reduction in the effort needed to discover and compare multiple OSS projects.

The OSSMETER platform can also be used to monitor in-house software development projects and provide key indicators for source code development activity and quality, the quality of communications with users, and the performance of the development and testing teams in identifying and repairing software defects.

These capabilities are expected to provide substantial benefits in cost savings as well as facilitate greater innovation in European software development through increased assurance and exploitation of OSS products by industry.

