

Report on dissemination and communication activities

Multi-cloud Execution-ware for
Large-scale Optimised Data-
Intensive Computing

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Leadership in Enabling and Industrial
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Executive summary

This document contains a summary of the comprehensive report for dissemination and communication activities planned and executed during the MELODIC project. It describes in detail channels, tools and activities that took place to let the consortium reach the target audience for the project outcome – the MELODIC platform. Within the document, we show how we have fulfilled the dissemination and communication plan framed in deliverable D7.3 “Dissemination and Communication Plan”. Having in mind that many projects suffer from a lack of such activities, we have firstly built the plan for reaching out and then we have consistently pursued our goals to introduce and advertise the MELODIC platform to many potential consumers. This deliverable clearly describes objectives and actions taken to accomplish all assumed steps.



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1 Introduction

1.1 Purpose of the document

The purpose of this deliverable is to report on all the project dissemination and communication activities, held during month 4 to 36 of the MELODIC project.

The document follows the project dissemination and communication strategy as explained in D7.3 “Dissemination and Communication Plan”. All these deliverables are publicly accessible in the MELODIC project website¹.

1.2 Audience of the document

As stated in deliverable D7.3 “Dissemination and Communication Plan”, the deliverable is directed to all partners and contributors of the MELODIC project and to every person who will participate in communication and dissemination activities in the future. We identify two main types of audiences as described below:

- Academic – participants working in university environments; scientists and researchers.
- Industrial – employees of private or public companies or corporations, mostly in the Information Technology sector.

1.3 Synergy of communication and dissemination

Both, communication and dissemination, need to be closely related so that they may bring results way better than only performing one of them, or both, but without any coordination. That is why within this project, despite of planning particular activities, we have also focused on planning them in the most effective way to promote the project and the outcome of the project. In the second phase of the project, early adopters were taken under consideration and several speeches were conducted jointly. All these activities had a positive impact on creating synergies both between planned activities and between participants of joint appearances.

2 Communication activities

2.1 Objectives for communication activities

The main objectives of the project communication activities include:

- To present to the general public the goal and results of MELODIC and how European industry, SMEs in particular, can benefit from the impacts achieved by the project.
- To get attention from the data-intensive application providers and developers and explain how MELODIC can help them derive benefits from multi-cloud.
- To make the MELODIC brand recognized by the members of European ICT research and cloud constituencies.
- To engage organisations from outside of the Consortium as contributing member of the MELODIC community

¹ <https://www.melodic.cloud/>



2.2 Target audiences

The communication activities have targeted the following groups (in line with the exploitation plan):

- Developers and providers of data-intensive applications
- The cloud and big data research community
- Users of data-intensive applications and the general public

2.3 Report on channels and types of communication

The MELODIC project was presented on many industrial meetings with some follow-ups in form of workshops or roundtables. Below, industry events, workshops and business personal meetings & calls are listed.

2.3.1 Industry events


Name of the event	Presentation for T-Mobile Czech Republic a.s.
Country of the event	Prague (Czech Republic)
Date of the event	2017.12.04
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> • 7bulls (Katarzyna Materka, Paweł Skrzypek) • CE-Traffic (Tomasz Przeździek, Jiri Novobilsky) • UiO (Geir Horn)
Outcome	Business presentation of the MELODIC Platform organised by CE-Traffic for T-Mobile Czech Republic a.s. The representatives of T-Mobile Czech and T-Mobile Slovakia were present and learnt about the MELODIC multi-cloud optimization platform. The MELODIC team learnt about Czech Cloud Computing business.

Name of the event	Best in Cloud 2017
Country of the event	Poland
Date of the event	2017.05.11
Kind of the event	Industrial
Participant	7bulls (Katarzyna Materka)
Outcome	<p>Prestigious conference held by Computerworld² dedicated to IT Management who are ready for new challenges in cloud computing.</p> <p>The MELODIC project won First Award in "The best implementation of the cloud service" for presenting a hybrid model of the Cloud Quality service: QA competences combined with competences of software architecture with emphasis on cloud solutions. Computerworld - a weekly magazine for managers and IT specialists dedicated to information and</p>

² <https://www.computerworld.pl/>





	<p>management technologies, published an article regarding the MELODIC First Award.</p> <p>That award highlighted high cloud competences of the whole consortium of the MELODIC project and prepared the ground for another win in 2019.</p>
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Name of the event	Best in Cloud 2018
Country of the event	Poland
Date of the event	2018.05.22
Kind of the event	Industrial
Participant	7bulls (Katarzyna Materka)
Outcome	 <p>Katarzyna Materka attended Best in Cloud conference - prestigious event hosted by Polish magazine Computerworld dedicated to IT Management who are ready for new challenges in cloud computing. Katarzyna Materka joined the event as a winner of the Best in Cloud competition from 2017. She had an opportunity to talk about the MELODIC project to Redactor-in-Chief, Mr. Szymon Augustyniak, as MELODIC is the winner of the edition from 2017. The main outcomes of the event were 2 presentations of the MELODIC solution to Agora S.A. - a Polish media company. Agora's activities include newspapers, advertising, cinemas, radio, various online services, magazines, books and more.</p>

Name of the event	Technology Banking Working Group
Country of the event	Poland
Date of the event	2018.10.07
Kind of the event	Industrial
Participant	7bulls (Alicja Reniewicz, Paweł Skrzypek)




<p>Outcome</p>	 <p>The main theme of the presentation for Polish Banking Association was "Cloud Computing paradigm in digital transformation". Main issues discussed with the representatives of major Polish banks were:</p> <ul style="list-style-type: none"> • ways of using the latest Cloud Computing solutions: Multicloud, Cross-cloud, Serverless - to maximize the effectiveness of the digital transformation process; • examples of applications, the implementation of which is possible only in the cloud Computing model, examples of accelerating the time of providing business services and reducing costs; • serverless model (FaaS) and traditional cloud computing models (IaaS, PaaS, SaaS). <p>The core outcome of this event was to establish cooperation with Orange Polska S.A. and Dell Sp. z o.o.</p>
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<p>Name of the event</p>	<p>Breakfast with MELODIC</p>
<p>Country of the event</p>	<p>Poland</p>
<p>Date of the event</p>	<p>2018.11.07</p>
<p>Kind of the event</p>	<p>Industrial - Industry Round Table</p>
<p>Participant</p>	<ul style="list-style-type: none"> • 7bulls (Katarzyna Materka, Paweł Skrzypek, Michał Semczuk) • CE-Traffic (Tomasz Przeździek)
<p>Outcome</p>	 <p>Presentation of the MELODIC project to the following companies: Accenture, Bluesoft, Asseco, IS-Wireless, Sidio, CyberSecurity. Meetings were held with entrepreneurs and businessmen of various industries to learn different ins and outs of the MELODIC project. The inauguration meeting, which took place on 7.11, had a form of business breakfast. During the event 7bulls and CE-Traffic presented information about the MELODIC project. The attendees,</p>



	<p>representing the industries such as e.g. Fintech, Mobility, Telco and IT had a chance to be introduced with two exemplary applications of MELODIC project: AI Investments in Fintech and Optimali in Mobility.</p> <p>The main result of this event was to establish cooperation with IS-Wireless with proposition of participation in H2020 projects.</p>
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Name of the event	Paris Open Source Summit
Country of the event	France
Date of the event	2018.12.06
Kind of the event	Industrial
Participant	7bulls (Paweł Skrzypek, Konrad Wawruch)
Outcome	 <p>The goal was to present the MELODIC platform as an open source product. The Paris Open Source Summit is Europe's premier event on open source, free software and open innovation. As an international conference summit, business fair and community event, OSS Paris highlights the driving role of open source technologies in current and future digital transformations. This event is dedicated to contributors, decision-makers and users of technological bricks and open source solutions.</p> <p>The core outcome of this event is the participation of 7bulls in OW2 - an independent non-profit organization dedicated to developing open source code infrastructure for middleware enterprise information systems. OW2 federates IT vendors and users, universities, and research centres from Europe, Asia, and America, representing thousands of IT professionals. The main result from the cooperation is so far the ReachOUT project (H2020).³</p>

Name of the event	Fourth International Workshop on Serverless Computing (WoSC) 2018
Country of the event	Switzerland
Date of the event	2018.12.20

³ <https://reout.eu/participation>

Kind of the event	Industrial
Participant	7bulls (Paweł Skrzypek)
Outcome	 <p>One of the biggest workshops devoted to serverless technology. Presentation of the paper entitled: "A Review of Serverless Frameworks" - related to MELODIC and Functionizer project for the international audience interested in that particular topic. The main success of this event was starting the business cooperation with Zurich University of Applied Sciences and Mr. Josef Spillner.</p>


Name of the event	Presentation for Orange Polska S.A.
Country of the event	Poland
Date of the event	2019.01.20
Kind of the event	Industrial
Participant	7bulls (Katarzyna Materka, Paweł Skrzypek)
Outcome	<p>Presentation regarding the MELODIC solution as an open source product for Orange Polska S.A. - a Polish telecommunications provider. Presentation entitled: „MELODIC - automation Multicloud for enterprise applications and Big Data Systems”. The key success of the presentation is establishing cooperation with Orange Polska S.A. and workshops for architects and DevOps which will be held on February 2019.</p>

Name of the event	ReaktorX DemoNight ⁴
Country of the event	Poland
Date of the event	2019.01.28
Kind of the event	Industrial
Participant	7bulls (Krzysztof Urbański)
Outcome	<p>Presentation of the MELODIC project on the meet-up session for start-ups followed by networking sessions in one of the biggest events in Warsaw for freelancers and local start-ups enabling them to co-work and collaborate if the expectations from both sides are met. The success of this</p>

⁴ <http://reaktorwarsaw.com/reaktorx-demo-night-on-jan-28th/>




	event was starting the commercial project with Polish start-up Renderro Sp. z o.o. – a company based on cloud solutions for freelancers and movie makers.
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Name of the event	Best in Cloud 2019
Country of the event	Poland
Date of the event	2019.05.15
Kind of the event	Industrial
Participant	7bulls (Katarzyna Materka)
Outcome	 <p>The main theme of the conference was “is cloud a business development tool and innovation centre?”. Best in Cloud 2019 is a meeting place for managers responsible for IT infrastructure in their organizations - CIO, CTO, managers responsible for business development, considering migration to the Cloud with cloud computing technology providers. Katarzyna Materka had a speech about “MELODIC - strategy and implementation of the Multi-Cloud model in the organization”. On this conference MELODIC won the First Award with “Best in Cloud 2019. Performance and integration” competition.</p>

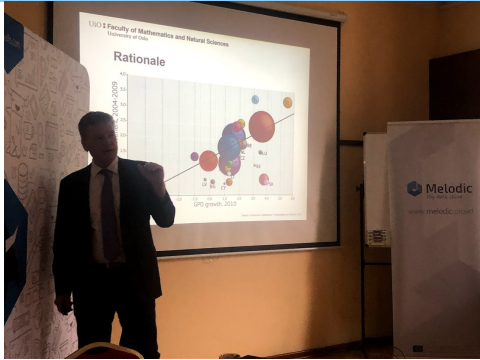
Name of the event	OSS'19 Montreal
Country of the event	Canada
Date of the event	2019.05.26 - 2019.05.27
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> CAS (Sebastian Schork) Simula (Feroz Zahid)
Outcome	The MELODIC workshop paper ‘Building an Open-Source Cross-Cloud DevOps stack for a CRM Enterprise Application: A Case Study’ was presented remotely on the OSS'19 in Montreal. The presentation introduced the CRM use case of CAS Software AG and the role of MELODIC



	as an open source project on both their software development and design processes.
Name of the event	OW2con'19 - "Open Source: Toward Industry Maturity"
Country of the event	France
Date of the event	2019.06.12 - 2019.06.13
Kind of the event	Industrial
Participant	7bulls (Marta Róžańska, Konrad Wawruch)
Outcome	<p>This conference was focusing on open source communities – especially on their growth. Presentation of the MELODIC solution as an open source enterprise ready platform - Konrad Wawruch had a presentation entitled: "KEYNOTE MELODIC – Multicloud Optimization and Cloud Agnostic Deployment Platform" and participated in the roundtable entitled: "Open Source Industry Maturity and OSS Governance".</p> <p>Several meetings after the presentation of the MELODIC project were led to some individual sessions about the details of what the MELODIC platform can give to the institutions interested in lowering their annual infrastructure costs. This was also a place to exchange the experience and best practices for promoting open source products.</p> 



	<p>The main success of the event was to establish cooperation with Aruba Wireless Networks and OVH.com as well as 2 presentations prepared after the event to: 1) Renault Polska Sp. z o.o. and 2) Groupe PSA S.A. regarding the MELODIC solution.</p> 
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Name of the event	Use-case presentation
Country of the event	Poland
Date of the event	2019.06.13
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> • 7bulls (Katarzyna Materka, Paweł Skrzypek) • CAS (Sebastian Schork) • UiO (Geir Horn)
Outcome	 <p>Presentation of capabilities of the MELODIC platform to one of the biggest Polish telecom (Polkomtel) and several start-ups after the plenary meeting held in Warsaw. It was a real use-case deployment (CAS) showing metric collection and the reconfiguration process after having analysed the gathered metrics.</p> <p>The result of the presentation is the use of Melodic in a commercial project with Renderro company as well as establishing relations with company Is Wireless, which resulted in cooperation with the project H2020 MORPHEMIC.</p>

Name of the event	Cyberforum
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Country of the event	Germany
Date of the event	2019.05.22
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> CAS (Antonia Schwichtenberg)
Outcome	<p>The MELODIC project was presented to an audience of small and medium-sized enterprises from and around Karlsruhe. Besides an overview of the key values and the architecture of the MELODIC platform, the focus was on Open Source Software licence and contribution models. The presentation was followed by a short demo on how MELODIC is used in the CAS use case. Questions were answered and interesting discussions on advantages of multi-cloud environments were held throughout and after the event.</p>


Name of the event	OpenReaktor Warsaw #77 ⁵
Country of the event	Poland
Date of the event	2019.09.18
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> 7bulls (Krzysztof Urbański) UiO (Marta Różańska)
Outcome	<div data-bbox="434 1151 1123 1668" data-label="Image"> </div> <p>This Open Reaktor #77 was organised with BitTorrent and Samba TV. The MELODIC project was presented during the event. The key success of this Open Reaktor was very positive feedback of MELODIC solution among start-ups, initial conversations regarding implementation of MELODIC to their structure. The core issue was establishing cooperation with co-founder of Samba TV and talks regarding the use of MELODIC by the company.</p>

Name of the event	MELODIC and Use-case presentation
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⁵ <http://reaktorwarsaw.com/>



Country of the event	Czech Republic
Date of the event	2019.09.24
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> • UiO (Geir Horn) • CAS (Sebastian Schork) • 7bulls (Pawel Skrzypek) • CE-Traffic (Tomasz Przeździeń)
Outcome	 <p>Presentation of the MELODIC platform and the CRM use case of CAS Software AG. With an audience from (among others) Oracle, Vodafone, Pfizer, DHL, Skoda and Accenture. In this event, the MELODIC platform and its features was presented to the participants.</p>

Name of the event	Digital Single Market - time for the free flow of data: freedom and economic growth in a (cyber)secure Europe
Country of the event	Poland
Date of the event	2019.09.30
Kind of the event	Industrial/government
Participant	<ul style="list-style-type: none"> • 7bulls (Katarzyna Materka) • Optimali Ltd as an early adopter of MELODIC platform • AI Investments Ltd as an early adopter of MELODIC platform
Outcome	 <p>Presentation of the MELODIC project as a working tool for two polish start-ups supported with presentation of real use-cases on the conference held by Polish Ministry of Digital Affairs. The conference was devoted to building "The National Cloud" that will be used by all government agendas.</p> <p>Amongst the participants and panellists were:</p>



	<p>Przemysław Koch - Plenipotentiary for informatisation, Ministry of Finance; Marcin Eckert - Board Member for Technologies and Operations, PZU S.A.; Jarosław Królewski - CEO, Synerise S.A.; Michał Jaworski - Deputy Chairman, Polish Chamber of Information Technology and Telecommunications; Mariusz Kłysiak - Director of IT operations department, Bank Gospodarstwa Krajowego; Pearse O'Donohue - Director of the Future Networks Team in Directorate General for Communications Networks</p>
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Name of the event	Města budoucnosti 2019
Country of the event	Czech Republic
Date of the event	2019.09.30
Kind of the event	Industrial/government
Participant	CE Traffic (Ondřej Špaček)
Outcome	 <p>CE-Traffic was part of opening panel discussion where MELODIC was teased. After the panel, several potential customers came to booth for more information. All of them were interested in lowering costs of their current cloud solutions. All attended people, interested in MELODIC, were from private sector, no municipality representatives.</p> <p>This event started further cooperation and other presentations for the clients from the event.</p>

Name of the event	Cloud Expo Asia
Country of the event	Singapore
Date of the event	2019.10.09 - 2019.10.10
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> 7bulls (Katarzyna Materka, Konrad Wawruch) UiO (Geir Horn) CE-Traffic (Tomasz Przeździek)



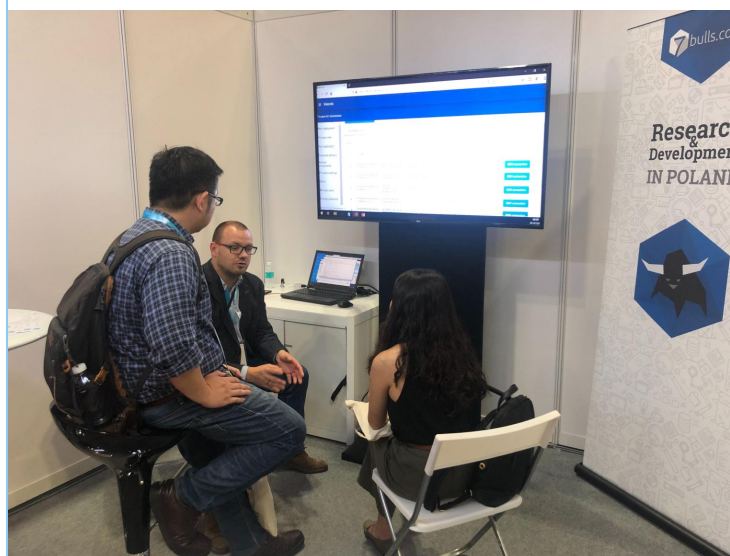
Outcome



Presentation of MELODIC on CloudExpo Asia for the world-wide audience on the largest event in Asia focusing on cloud aspects. This is a place where key-decisions makers are gathering, so the interest in

novelties is very high.

The main success of the event was starting cooperation with RAPPIER PTE LTD, a company focusing on building integrated technology solutions for the digital marketing area and CtrlS company, which provides a wide range of managed services, including security, middleware and databases.



Name of the event	TOOLS 50+1
Country of the event	Russia
Date of the event	2019.10.12 - 2019.10.13
Kind of the event	Scientific/Industrial



Participant

- 7bulls (Marta Różańska, Alicja Reniewicz, Paweł Skrzypek),



Outcome


Series of tutorials were held for students, where they had to deploy MELODIC by themselves at the end of the session. MELODIC was challenged with adding predictions and as the result of this challenge MELODIC was the winner of all 9 applications that were presented there and got audience reward.



The success of this event was starting the cooperation with Arouse System CO., LTD. – software company from Russia.

Name of the event	Autonomy
Country of the event	France
Date of the event	2019.10.16 - 2019.10.17



Kind of the event	Industrial
Participant	CE-Traffic (Tomasz Przeździeń, Jiří Novobilský, Hynek Masata, Michalina Pszczółkowska, Katarzyna Stec)
Outcome	 <p>During two days of the international Autonomy event, the MELODIC platform was presented to potential clients from the mobility market. The conference program covered the main challenges of intelligent and sustainable mobility as well as trends in urban mobility. Potential customers interested in the possibilities offered by MELODIC were primarily providers of services based on data analysis, real time computations and dealing with the huge amount of data. They were mainly from the private sector, start-ups, as well as university research staff.</p>

Name of the event	OSS Lyon
Country of the event	France
Date of the event	2019.10.28 - 2019.10.30
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> • 7bulls (Krzysztof Urbański), • UiO (Geir Horn, Marta Różańska)
Outcome	<p>This event was a great opportunity to present on the stand organised real-time demo of MELODIC as an open source enterprise ready platform. It was also a presentation of MELODIC entitled: "Autonomous Multi-Cloud Application Deployment and Optimized Management Using Open Source Frameworks" made by Marta Różańska and Geir Horn</p>





Several meetings after presentation of the MELODIC project were led to some individual sessions about the details of what MELODIC platform can give to the institutions interested in lowering their annual infrastructure costs. This was also a place to exchange the experience and best practices for promoting open source products.


The core outcome was conversation with members of the European Commission regarding joining their bug bounty EU-FOSSA project, conversation with companies creating similar projects about the possibility of their contribution to MELODIC.




Name of the event	ICT Security World ⁶
Country of the event	Greece
Date of the event	2019.11.14
Kind of the event	Industrial (including public administrations and policy makers)
Participant	<ul style="list-style-type: none"> • ICCS (Yiannis Verginadis)

⁶ <https://www.ictsecurity.gr/>




<p>Outcome</p>	 <p>Presentation of the MELODIC platform security services and panel discussion with top executives from the cloud and cybersecurity industry. The presentation was held in Greek language and focused on the security challenges in multi-clouds, while it analysed the implemented and evaluated XACML-based solution for access control. The audience (>200 people) included among others: representatives from the cloud computing industry, CEOs and CTOs from the top cybersecurity-focused Greek SMEs and General Secretaries from the Greek Ministry of Digital Governance. The presentation attracted significant positive comments for the MELODIC overall innovative solution.</p>
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<p>Name of the event</p>	<p>Data Science Conference</p>
<p>Country of the event</p>	<p>Serbia</p>
<p>Date of the event</p>	<p>2019.11.19 - 2019.11.20</p>
<p>Kind of the event</p>	<p>Industrial</p>
<p>Participant</p>	<ul style="list-style-type: none"> 7bulls (Paweł Skrzypek)
<p>Outcome</p>	 <p>The conference was divided into three different storylines (Technical, Business and Kicstarter). Each one represented a different aspect of Data Science.</p> <p>Paweł Skrzypek shows the benefits of MELODIC for AI based, compute intensive applications in the session entitled: "Complex AI Forecasting Methods for Investments Portfolio Optimization".</p>

<p>Name of the event</p>	<p>ML in PL (Machine Learning in Poland)</p>
<p>Country of the event</p>	<p>Warsaw</p>
<p>Date of the event</p>	<p>2019.11.22 - 2019.11.25</p>
<p>Kind of the event</p>	<p>Industrial and academic</p>
<p>Participant</p>	<ul style="list-style-type: none"> 7bulls (Paweł Skrzypek)

Outcome	The ML in PL Conference is an event focused on the best of Machine Learning both in academia and in business. This time the conferences gathered speakers from top research facilities, who discussed bright ideas focused on the practical aspects of ML. Paweł Skrzypek presented the MELODIC solution during this conference. The key result of the conference is the positive response regarding the MELODIC solution both in the academic and business area.
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Name of the event	12th IEEE/ACM International Conference on Utility and Cloud Computing
Country of the event	New Zealand
Date of the event	2019.12.02 - 2019.12.05
Kind of the event	Industrial and academic
Participant	<ul style="list-style-type: none"> • 7bulls (Alicja Reniewicz) • UiO (Marta Różańska) • ULM (Daniel Seybold)
Outcome	<p>This event took place in Auckland University of Technology in New Zealand. UCC2019 is the premier IEEE/ACM conference for areas related to Cloud Computing as a Utility and provides an international forum for leading researchers and practitioners in this important and growing field. Alicja, Marta and Daniel presented tutorial, entitled: "Goodbye Vendor Lock-in: Getting your Cloud Applications Multi-Cloud Ready!" and Marta showed two presentations of papers connected to the MELODIC. The reaction about MELODIC solution was very positive with possible way of cooperation in academic and industrial dimension.</p> 

Name of the event	DevFest
Country of the event	Poland
Date of the event	2019.12.07
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> • 7bulls (Paweł Skrzypek)



<p>Outcome</p>	<p>Google Developer Groups (GDG) are open communities, organizing local developer meetups, discussing and learning about various Google Developer Technologies, actively organizing events in 134 countries, as 1021 groups worldwide.</p> <p>GDG Warsaw was established in April 2011, and it's one of the oldest and most active community in Poland. GDG Radzymin is the newest, yet very ambitious chapter in the polish GDG family!</p> <p>Paweł Skrzypek presented the MELODIC solution during the meeting.</p>
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<p>Name of the event</p>	<p>Paris Open Source Summit</p>
<p>Country of the event</p>	<p>France</p>
<p>Date of the event</p>	<p>2019.12.10-2019.12.11</p>
<p>Kind of the event</p>	<p>Industrial</p>
<p>Participant</p>	<ul style="list-style-type: none"> • UiO (Geir Horn) • 7bulls (Konrad Wawruch) • CAS (Sebastian Schork)
<p>Outcome</p>	<p>"Open source, Innovation for good" is the title of this edition of the Paris Open Source Summit. The 2019 Paris Open Source Summit programme is based on eight TECH themes, covering both technical solutions and the innovative uses and societal issues of open digital technology contributed by Open Source.</p> <p>The MELODIC solution was presented in this event in form of two talks:</p> <ol style="list-style-type: none"> 1. "Autonomous Multi-Cloud Application Deployment and Optimized Management Using Open Source Frameworks" 2. Untitled talk describing how the Melodic codebase is migrated to the OW2 infrastructure

2.3.2 Workshops

<p>Name of the event</p>	<p>Asseco⁷ MELODIC Training</p>
<p>Country of the event</p>	<p>Poland</p>
<p>Date of the event</p>	<p>2018.03.09</p>
<p>Kind of the event</p>	<p>Industrial</p>
<p>Participant</p>	<p>7bulls (Katarzyna Materka, Paweł Skrzypek)</p>

⁷ <https://pl.asseco.com/en/?start=1270>



Outcome	Presentation of MELODIC for Asseco - the biggest Polish ICT company. Presentation followed then by a workshop on which cloud puzzles were being solved and the use of MELODIC was presented (see below in 2.3.3.1).
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Name of the event	Bluesoft⁸ MELODIC presentation
Country of the event	Poland
Date of the event	2018.06.11
Kind of the event	Industrial
Participant	7bulls (Katarzyna Materka, Paweł Skrzypek, Marcin Prusiński)
Outcome	Presentation of MELODIC for polish ICT company Bluesoft. Workshop showing the opportunities the MELODIC platform brings. Presentation supported with MELODIC platform launch and recalculation made with a new deployment plan presented.

Name of the event	Workshop with architects and DevOps of Orange Polska S.A.
Country of the event	Poland
Date of the event	2019.02.14
Kind of the event	Industrial
Participant	7bulls (Katarzyna Materka, Paweł Skrzypek, Marta Różańska, Marcin Prusiński)
Outcome	Workshops organised for architects and DevOps of Orange Polska S.A. as a positive feedback of the presentation held in January 2019. Workshops in Camel were started by the MELODIC presentation and demo of the MELODIC solution. Very positive feedback of workshops included the MELODIC implementation plans for Orange and the integrated cloud framework of the company from MELODIC.

Name of the event	MELODIC workshop for academic and industry partners
Country of the event	Poland
Date of the event	2019.11.25
Kind of the event	Academic and Industrial event
Participant	<ul style="list-style-type: none"> • UiO (Geir Horn) • 7bulls (Katarzyna Materka, Alicja Reniewicz, Marta Różańska, Paweł Skrzypek)

⁸ <https://bluesoft.com/en/>



	<ul style="list-style-type: none"> • CE-Traffic (Tomasz Przeździek, Hynek Masata, Michalina Pszczółkowska) • ICCS (Yiannis Verginadis) • Warsaw University of Technology • OPEGIEKA Ltd (Polish Geoinformatics Research and Development Center) • CloudFerro (Polish technological company)
Outcome	<p>Workshop was dedicated to academic and industrial partners in order to present the possibilities of using MELODIC in different areas. Event was divided into 3 main parts: (1) Presentation of MELODIC project and MELODIC solution: (a) Technical presentation of MELODIC platform; (b) Presentation regarding the distributed monitoring system in MELODIC; (c) Live demo of MELODIC; (2) CENAGIS project: (a) Introduction of the project and it's goal; (b) Implementation of CENAGIS cloud; (3) Possible cooperation in H2020.</p> <p>The main result of this event was to establish cooperation with academic field and CENAGIS creators in order to adapt the MELODIC solution into the future potential projects and initiatives.</p>

2.3.3 Direct meetings


Name of the event	Agora ⁹
Country of the event	Poland
Date of the event	2018.09
Kind of the event	Industrial
Participant	7bulls (Katarzyna Materka, Paweł Skrzypek, Marcin Prusiński)
Outcome	<p>Presentation of the MELODIC platform to one of the biggest polish publishing company. As agreed, the MELODIC platform may be a remedy for the needs of the resource consumption as they have many peaks when they need a lot of resources and quite a lot of time, where having so much hardware is just waiting for tasks to be performed.</p>

⁹ www.agora.pl



Name of the event	Dell ¹⁰
Country of the event	Poland
Date of the event	2019.06.23
Kind of the event	Industrial
Participant	7bulls (Marta Rożańska, Paweł Skrzypek, Marcin Prusiński)
Outcome	Presentation of the MELODIC for Dell. Presentation of the MELODIC platform to convince the potential customers to install the solution for reducing the resource usage.

Name of the event	IBM ¹¹
Country of the event	Poland
Date of the event	2019.07.07
Kind of the event	Industrial
Participant	7bulls (Paweł Skrzypek, Konrad Wawruch)
Outcome	Presentation of MELODIC for IBM. This event had a follow-up where more details of the platform capabilities were shown to the target audience. This may end with collaboration either with IBM as a storage provider or as a partnership for selling MELODIC to IBM's customers.

Name of the event	Orange Labs ¹²
Country of the event	Poland
Date of the event	2019.07.12
Kind of the event	Industrial
Participant	7bulls (Marcin Prusiński)
Outcome	 <p>Presentation of MELODIC for Orange Labs/Workshop followed by a series of meetings and conf-calls and talks with potential partners for disseminating the MELODIC platform.</p>

¹⁰ www.dell.com/learn/pl/pl/plbsdi/large-enterprise-solutions?~ck=mn

¹¹ www.ibm.com/pl-pl

¹² www.orange.pl/OrangeLabs2.phtml



Name of the event	Renault ¹³
Country of the event	Business conference call
Date of the event	2019.07.23
Kind of the event	Industrial
Participant	7bulls (Katarzyna Materka, Paweł Skrzypek)
Outcome	Presentation of MELODIC/Workshop Demo for Renault

Name of the event	RAPPIER PTE Ltd ¹⁴
Country of the event	Business conference call
Date of the event	2019.10.14
Kind of the event	Industrial
Participant	7bulls (Katarzyna Materka, Marta Różańska, Marcin Prusiński, Paweł Skrzypek)
Outcome	One of the successful follow-ups after the conference in Singapore (CloudExpo Asia). This company deals with campaign management sold as SaaS and end-to-end marketing solution cooperating with some big players on the market (Uber, Citibank). Their interest in the MELODIC platform as a solution for minimizing costs is very big. Company informed about the migration to Camel. Feedbacks from the business call were very promising and may lead to tight cooperation in the nearest future.

Name of the event	Keboola ¹⁵
Country of the event	Business conference call
Date of the event	2019.10.17
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> • CET (Hynek Masata, Tomasz Przeździeń, Michalina Pszczółkowska) • 7bulls (Katarzyna Materka, Marta Różańska, Marcin Prusiński, Paweł Skrzypek) • CAS (Sebastian Schork)
Outcome	Keboola is a company which helps IT to work smoothly by connecting IT environments, but it consumes a huge amount of resources, thereby this is

¹³ www.renault.pl

¹⁴ www.rappier.com

¹⁵ www.keboola.com



	the place where MELODIC platform can help this company. The presentation was received with a great interest and this may also lead to tight cooperation.
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Name of the event	Computas ¹⁶
Country of the event	Norway
Date of the event	2019.10.21
Kind of the event	Industrial
Participant	<ul style="list-style-type: none"> • 7bulls (Konrad Wawruch, Marcin Prusiński) • UiO (Geir Horn)
Outcome	Presentation of the MELODIC platform to Norway's company that is dealing with the huge amount of data collected from their everyday life (power measurements, localisation of the fleet). The MELODIC platform can be of a great help to them as they need not only the storage resources, but also to calculate and compute data in peaks and give feedback to the customers in near real time.

2.3.4 Summary of outcome

The MELODIC platform has been presented to various types of potential consumers as a very innovative product that breaks the rules on the market. As the market is mainly possessed by three major players, none of the potential grantees could imagine how easily vendor lock-in can be avoided by using MELODIC.

Some of the presentations will have their follow-up as a workshop and may end up with installation of the MELODIC platform.

Some of the meetings have ended with a tight cooperation and will soon end as commercial projects.

Renderro¹⁷ is a Polish start-up operating in the creative industry market, which was established to create an attractive solution enabling graphic designers, filmmakers and people working with graphic materials to build post-production projects quickly, easily, cheaply and safely. Its platform called "Renderro" is a Cloud Workplace for audio-visual content creators, designers and creative individuals. Renderro won the main award of ReaktorX DemoNight, one of the OpenReaktor edition.

CloudPartners is a fresh Polish start-up dealing with optimizing resources and securing storing data on the medical market. It was established to optimize the cloud environment for external clients from various segments (e.g., telecommunications, IT). CP provides consulting services in the area of optimization and provides recommendations in the area of configuration/architecture, performance and price of cloud services (public and private). Company is a pioneer on the Polish market in the area of cost optimization of public and private cloud for external clients.

¹⁶ <https://computas.com/en/>

¹⁷ <http://renderro.com/#>



Sun Data Ethiopia is a sustainable technology company, that uses renewable energy to power its data centres, providing eco-friendly computing power. ETH Invest through Sun Data Ethiopia wishes to accelerate Ethiopian growth of services in the IT sector, and will through Sun Data Ethiopia invest in the local workforce, data centre infrastructure, training academy, develop new software locally, new IT services and help Ethiopia become the IT hub of Africa.

Sun Data will provide Dynamic scalability solution (DSS) which will allow for dynamic scaling of on-premises computing and data resources to the Sun Data Cloud, based on current demand and workload. Sun Data will deploy advanced multi-cloud optimization platform MELODIC which allows for intelligent and dynamic management of resources, adding and removing according to the needs. It will allow to handle peak usage without oversized on-premise Capex investments on customer side. It also will provide automatic fall back in case of the customer resources failure. The key elements of DSS are:

- setting up the Cloud Computing resources (VMs and storage) in the Sun Data Cloud
- setting the configuration of the automatic optimization platform MELODIC to allow for peak workload handling.

The Sun Data Cloud resources will be used only in the period of the peak workload. Customers will only be charged for the resources actually used. Each of DSS design will be done individually for each customer that may be charged as a once-off set-up fee, based on the size and complexity of the project.

2.3.5 Social media

In this section, we report our observations from different social media services, such as LinkedIn, Facebook, and Twitter.

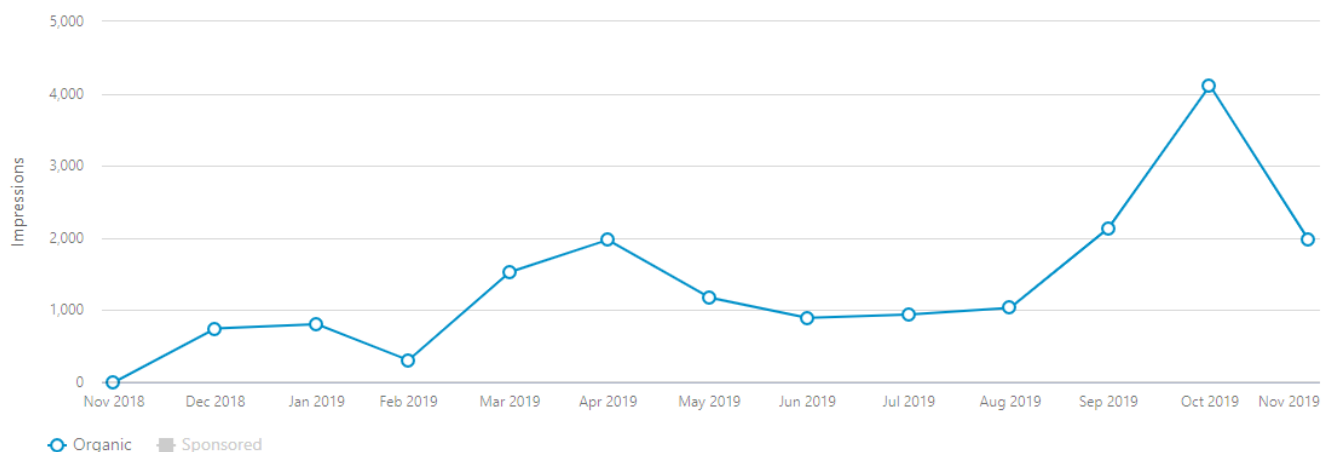
As we planned in Deliverable D7.3, all events related to the dissemination and communication of the project were to be regularly published in social media (Facebook, Twitter and LinkedIn), which was to allow a continuous dialogue and engagement with other players who use actively various internet platforms. According to the assumptions, it resulted in establishing many business relationships and also resulted in launching several projects based on the MELODIC platform, which we wrote about in previous chapters of this document.

2.3.5.1 LinkedIn

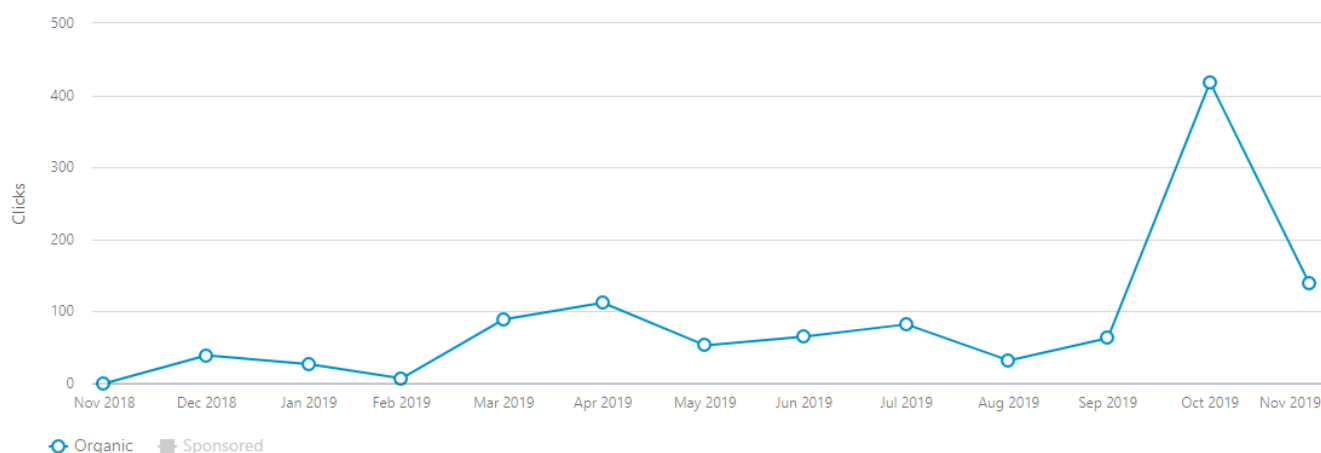
Time period for which statistics are available is 2018.11.30 – 2019.12.16.

Impressions ("Views when an update is at least 50% on screen for at least 300 ms, or when it is clicked, whichever comes first.") = 19474.

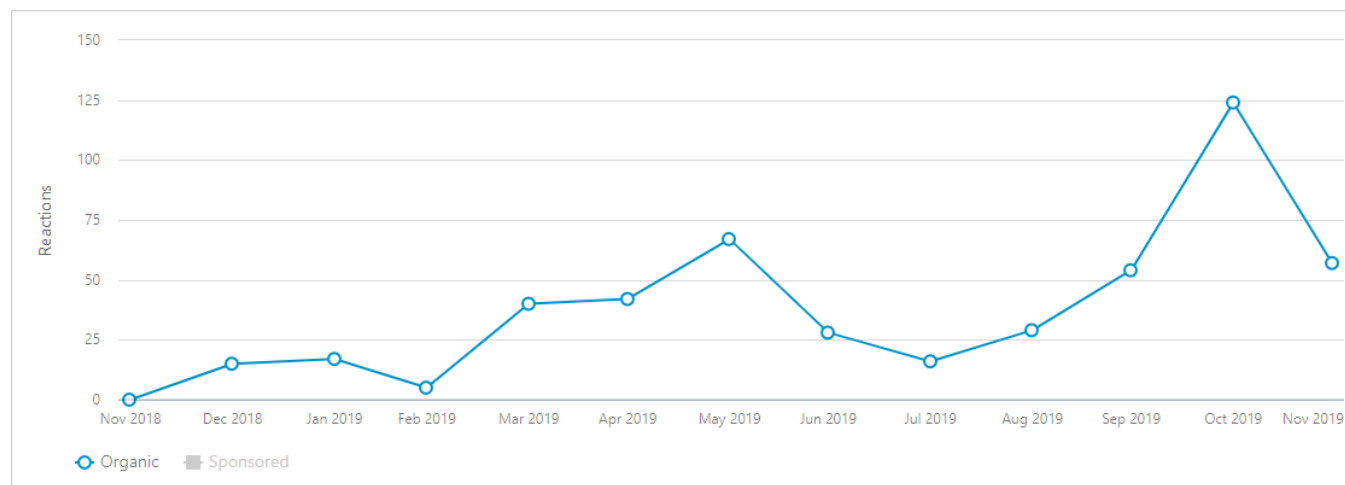




Clicks = 1290



Reactions ("like", "celebrate", etc) = 526



2.3.5.2 Twitter

Time period for which statistics are available is 2019.09.19 – 2019.12.18.

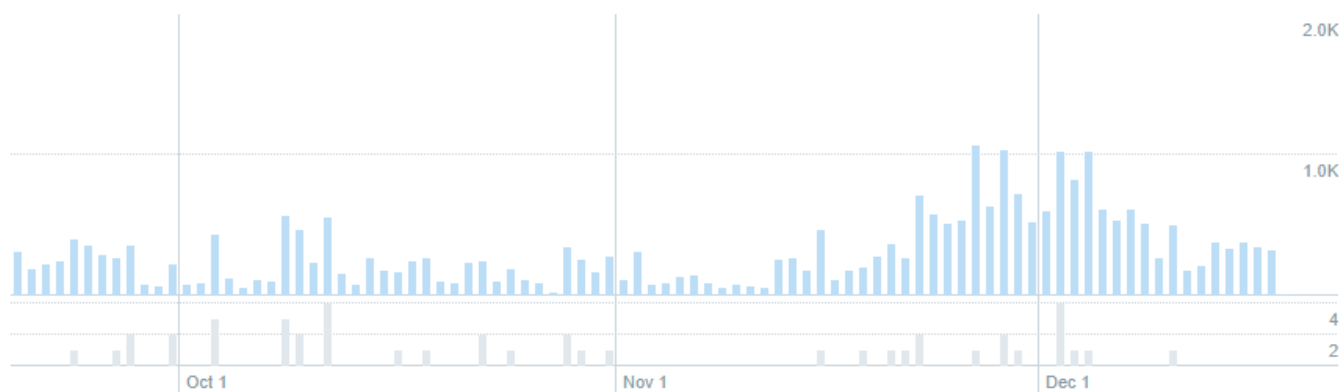
Impressions – 28 100/quarter and 309 /day
Retweets = 35

Clicks = 91

Likes = 92

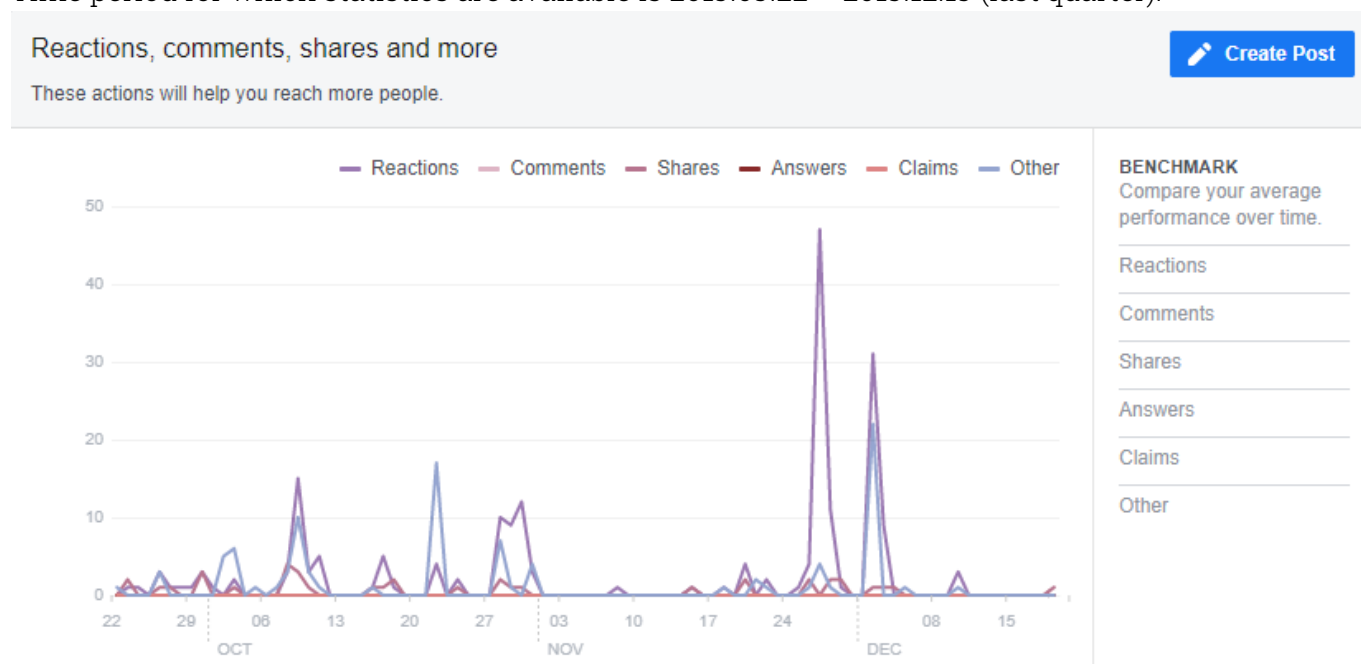


Your Tweets earned **28.1K impressions** over this **91 day** period

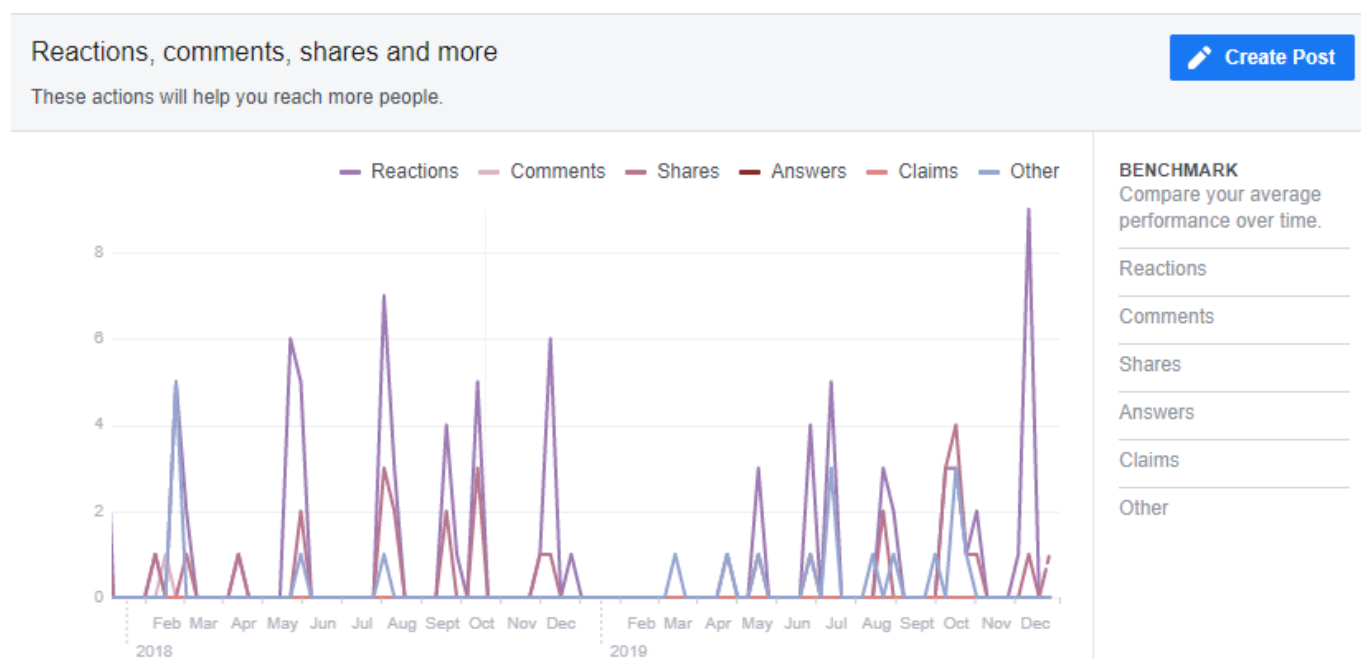


2.3.5.3 Facebook

Time period for which statistics are available is 2019.09.22 – 2019.12.19 (last quarter).



Time period for which statistics are available is 2017.12.16 – 2019.12.19 (last two years).

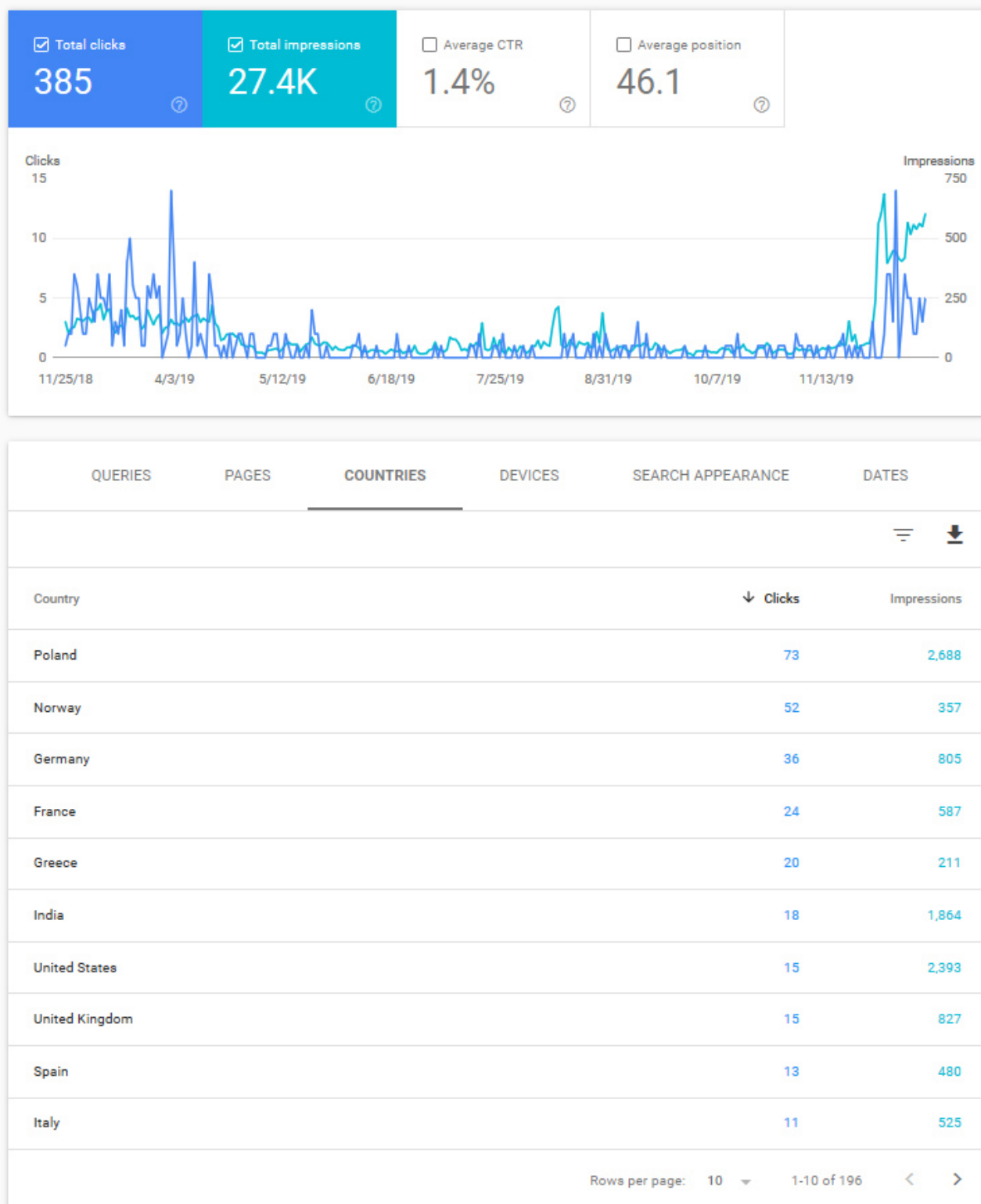


2.3.6 MELODIC website

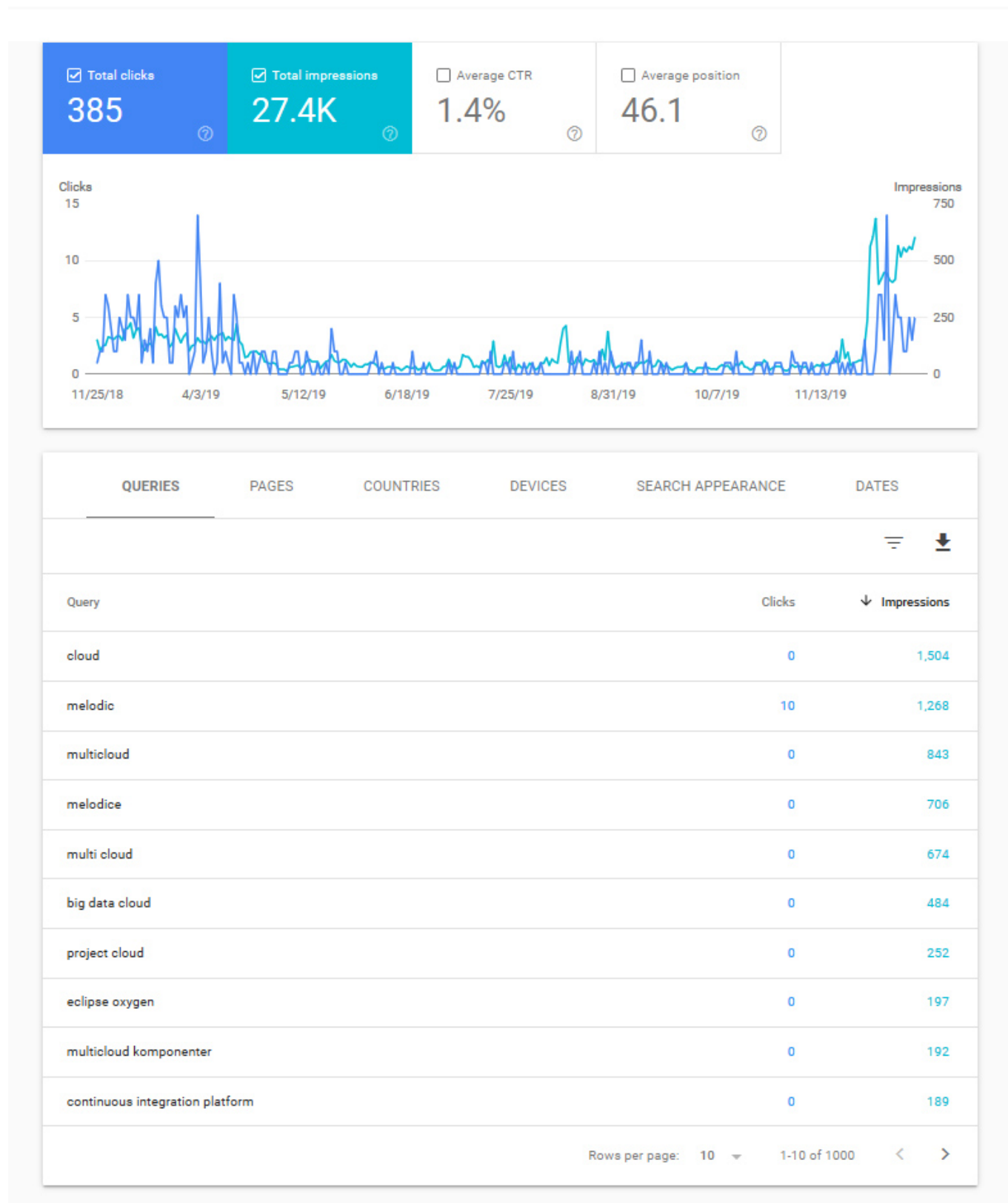
2.3.6.1 Statistics

Time period for which statistics are available is 2018.11.25 – 2019.12.15.

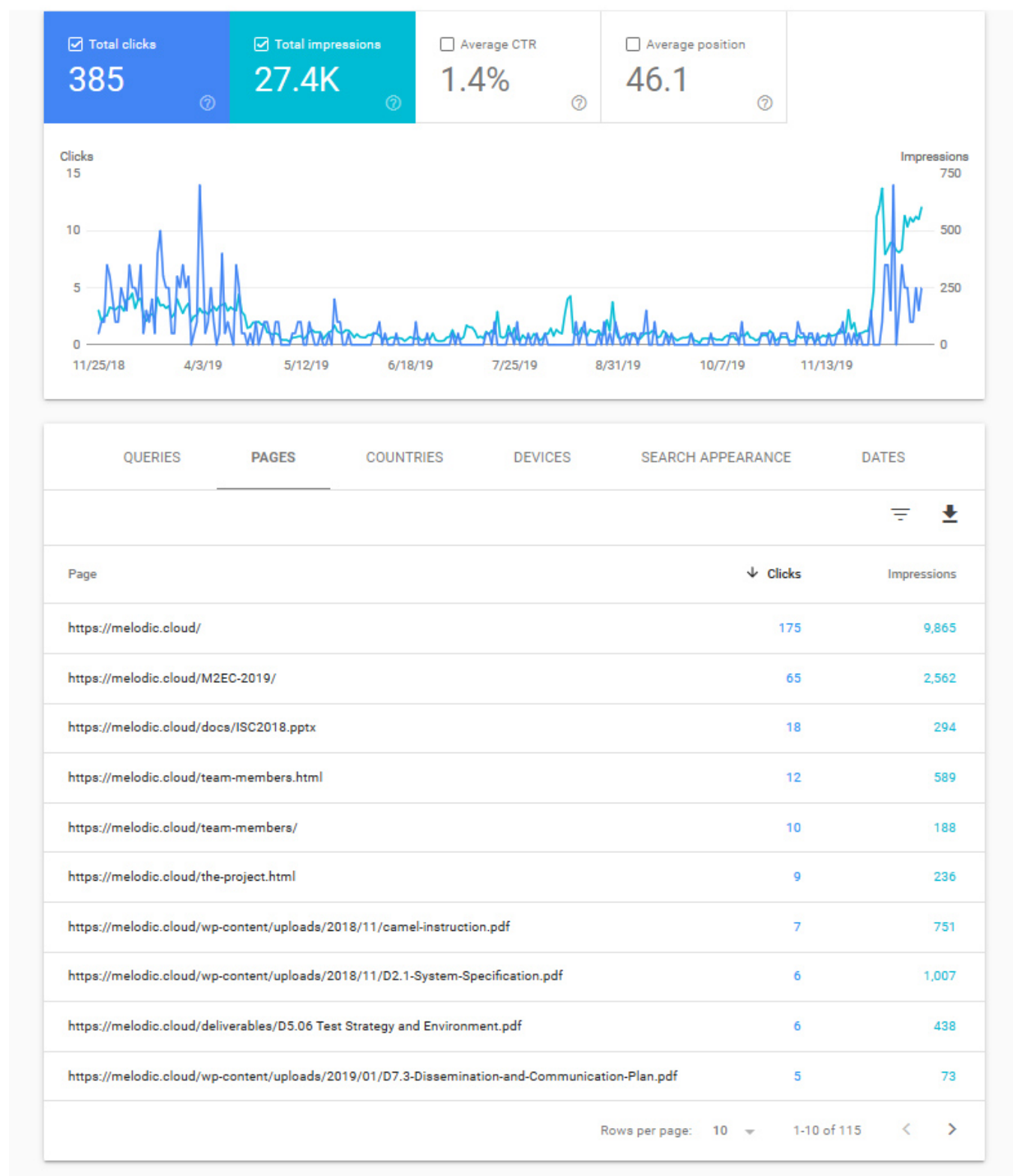
Visits divided by countries:



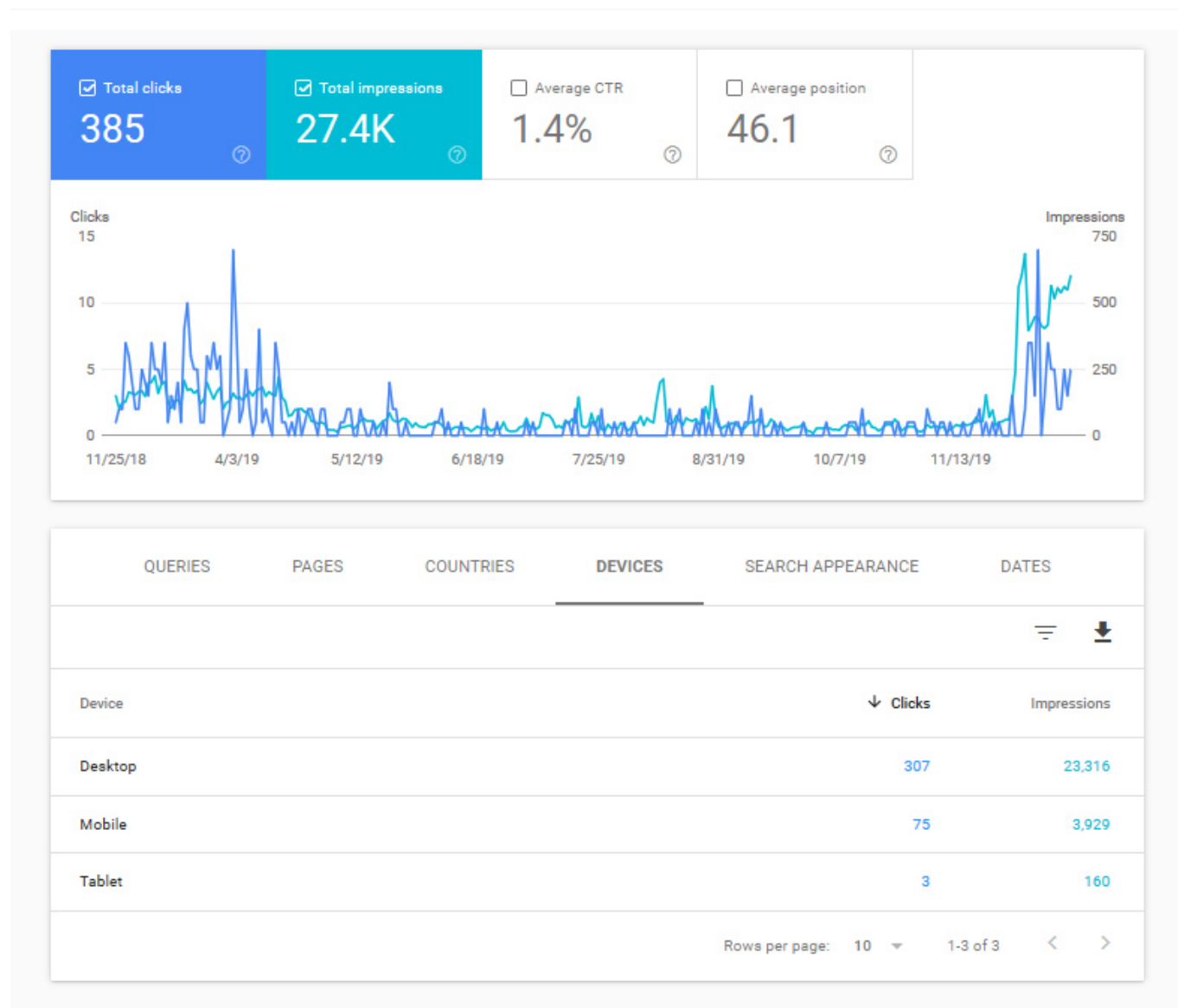
Visits divided by views:



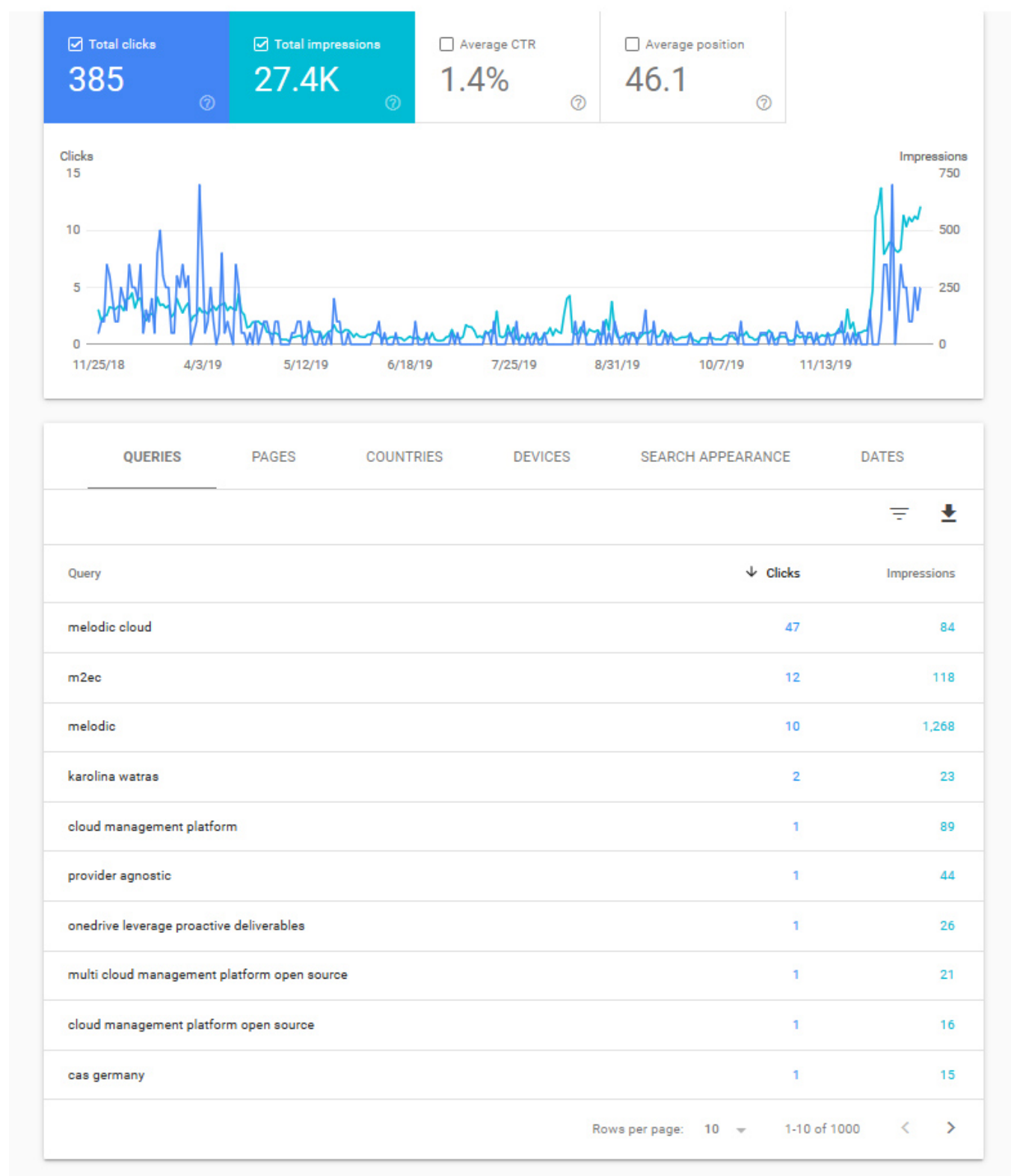
Visits divided by pages visited:



Visits divided by devices:



Visits divided by query:



3 Communication events statistics

3.1 Event statistics

Table 1 Event statistics

Participant	Number of events taken part in (conference, workshops...)
7bulls	30
CE Traffic	3
UiO	16
UULM	8
ICCS	6
CAS	1
Simula	12

4 Dissemination activities

4.1 Objectives for dissemination activities

The main objectives of the project dissemination activities include:

- to ensure that the results of the project are effectively disseminated to the potential users, realized by several communication channels including scientific publications, training workshops, participation in trade shows/exhibitions, etc.
- to guarantee the maximum visibility of the project: informing key stakeholder at local, national, European and international level on the project results
- to foster activities to raise awareness about cloud vendor lock-in
- to follow and involve in cloud standardization initiatives

4.2 Target audiences

The dissemination activities have targeted the following groups (in line with the exploitation plan):

- the cloud and big data research community
- developers and providers of data-intensive application
- users of data-intensive applications and the general public

4.3 Report on channels and types of dissemination

4.3.1 Publications list

- **Publication title:** Is Distributed Database Evaluation Cloud-Ready?
 - **Place of publication:** ADBIS: European Conference on Advances in Databases and Information Systems
 - **Date of publication:** September 2017
 - **Publication type:** Conference Paper
 - **Author(s):** Daniel Seybold, Jörg Domaschka



- **Outcome:** This paper presents a cloud-centric analysis of distributed database evaluation frameworks based on evaluation tiers and framework requirements. It analyses eight well adopted evaluation frameworks. The results point out that the evaluation tiers performance, scalability, elasticity and consistency are well supported, in contrast to resource selection and availability.
- **Publication title:** Towards a framework for orchestrated distributed database evaluation in the cloud
 - **Place of publication:** 18th Doctoral Symposium of the 18th International Middleware Conference
 - **Date of publication:** December 2017
 - **Publication type:** Symposium Paper
 - **Author(s):** Daniel Seybold
 - **Outcome:** This paper proposes a novel evaluation approach that supports orchestrated evaluation scenarios for scalability, elasticity and availability by exploiting cloud resources. We highlight the challenges in evaluating DDBMSs in the Cloud and introduce a cloud-centric framework for orchestrated DDBMS evaluation, enabling reproducible evaluations and significant rating indices.
- **Publication title:** MELODIC: Utility Based Cross Cloud Deployment Optimisation
 - **Place of publication:** Advanced Information Networking and Applications Workshops (AINAW)
 - **Date of publication:** May 2018
 - **Publication type:** Workshop Paper
 - **Author(s):** Geir Horn and Pawel Skrzypek
 - **Outcome:** The paper presents the fundamentals of the MELODIC solution based on a high-level model of the application and dynamic, Cloud provider agnostic optimised deployment and reconfiguration of the application.
- **Publication title:** A Provider-agnostic Approach to Multi-cloud Orchestration using a Constraint Language
 - **Place of publication:** the 18th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing
 - **Date of publication:** May 2018
 - **Publication type:** Conference Paper
 - **Author(s):** Daniel Baur, Daniel Seybold, Frank Griesinger, Hynek Masata, Jörg Domaschka
 - **Outcome:** The paper proposes a cloud provider-agnostic application and resource description using a constraint language. It allows users to express resource requirements of an application without prior knowledge of existing offers. Additionally, it proposes a discovery service automatically collecting available offers.
- **Publication title:** Done Yet? A Critical Introspective of the Cloud Management Toolbox
 - **Place of publication:** IEEE International Conference on Engineering, Technology and Innovation (ICE/ITMC)
 - **Date of publication:** June 2018
 - **Publication type:** Conference Paper



- **Author(s):** Mark Leznik, Simon Volpert, Frank Griesinger, Daniel Seybold, Jörg Domaschka
- **Outcome:** This paper presents the current state of the art in monitoring, storage, analysis and adaptation approaches for the data produced by cloud computing environments, to enable proactive, dynamic resource provisioning.
- **Publication title:** IaaS Service Selection Revisited
 - **Place of publication:** European Conference on Service-Oriented and Cloud Computing
 - **Date of publication:** August 2018
 - **Publication type:** Conference Paper
 - **Author(s):** Kyriakos Kritikos, Geir Horn
 - **Outcome:** This paper proposes a novel technique which involves the modelling of an optimisation problem in a different form than the most common one. In particular, this form enables the use of exhaustive techniques, like constraint programming (CP), such that both an optimal solution is delivered in a much more scalable manner.
- **Publication title:** Distributed Complex Event Processing in Multiclouds
 - **Place of publication:** European Conference on Service-Oriented and Cloud Computing
 - **Date of publication:** August 2018
 - **Publication type:** Conference Paper
 - **Author(s):** Yiannis Verginadis, Vasilis Stefanidis, Ioannis Patiniotakis, Gregoris Mentzas
 - **Outcome:** A key tool for managing multi-cloud applications and guarantying their quality of service, even in extreme scenarios of workload fluctuations, are adequate distributed monitoring mechanisms. In this work, a distributed complex event processing architecture is proposed that follows automatically the big data application deployment in order to efficiently monitor its health status and detect reconfiguration opportunities.
- **Publication title:** Towards Dynamic and Optimal Big Data Placement
 - **Place of publication:** IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom)
 - **Date of publication:** September 2018
 - **Publication type:** Conference Paper
 - **Author(s):** Kyriakos Kritikos
 - **Outcome:** This paper proposes a novel, dynamic big data placement algorithm which can more optimally find the best placement solution by considering multiple optimisation objectives and solving in a more precise manner the big data placement problem with respect to the state-of-the-art. Further, a novel suggestion for optimally combining such an algorithm with a big data application management system is proposed so as to have the ability to address in conjunction both big data placement, processing and resource management issues.
- **Publication title:** Metadata Schema for Data-Aware MultiCloud Computing
 - **Place of publication:** IEEE International Symposium on Innovations in Intelligent Systems and Applications (INISTA)
 - **Date of publication:** September 2018
 - **Publication type:** Conference Paper



- **Author(s):** Yiannis Verginadis, Ioannis Patiniotakis, Gregoris Mentzas
- **Outcome:** This paper discusses a Metadata Schema for data-aware multi-cloud computing which aspires to form the appropriate background vocabulary that will aid the big data-aware application deployment for distributed and loosely coupled multi-cloud applications.
- **Publication title:** Future Cloud Systems Design: Challenges and Research Directions
 - **Place of publication:** IEEE Access Journal
 - **Date of publication:** November 2018
 - **Publication type:** Journal Paper
 - **Author(s):** Amir Taherkordi, Feroz Zahid, Yiannis Verginadis, Geir Horn
 - **Outcome:** This paper develops a comprehensive taxonomy of main cloud computing research areas, discuss state-of-the-art approaches for each area and the associated sub-areas, and highlight the challenges and future directions per research area.
- **Publication title:** A Model Driven Engineering Approach for Flexible and Distributed Monitoring of Cross-Cloud Applications
 - **Place of publication:** IEEE/ACM 11th International Conference on Utility and Cloud Computing (UCC)
 - **Date of publication:** December 2018
 - **Publication type:** Conference Paper
 - **Author(s):** Daniel Baur, Frank Griesinger, Yiannis Verginadis, Vasilis Stefanidis, Ioannis Patiniotakis
 - **Outcome:** The paper proposes a monitoring and event processing framework following a model-driven approach, that allows users to express i) the monitoring demand by directly referencing entities of the deployment context, ii) aggregate the monitoring data using mathematical expressions, iii) trigger and process events based on the monitoring data and finally iv) attach scalability rules to those events.
- **Publication title:** The Impact of the Storage Tier: A Baseline Performance Analysis of Containerized DBMS
 - **Place of publication:** Euro-Par 2018: Euro-Par 2018: Parallel Processing Workshops
 - **Date of publication:** December 2018
 - **Publication type:** Workshop Paper
 - **Author(s):** Daniel Seybold, Christopher B. Hauser, Georg Eisenhart, Simon Volpert, Jörg Domaschka
 - **Outcome:** The myriad of container operation models and storage backends even raises the complexity of operating a containerized DBMS. This paper presents an extensible evaluation methodology to identify performance overhead of a containerized DBMS by combining three operational models and two storage backends.
- **Publication title:** A Self-Adaptive Network for HPC Clouds: Architecture, Framework, and Implementation
 - **Place of publication:** IEEE Transactions on Parallel and Distributed Systems (TPDS)
 - **Date of publication:** December 2018
 - **Publication type:** Journal Paper



- **Author(s):** Feroz Zahid, Amir Taherkordi, Ernst Gunnar Gran, Tor Skeie, Bjørn Dag Johnsen
- **Outcome:** This paper presents a framework for a self-adaptive network architecture for HPC clouds based on lossless interconnection networks, demonstrated by means of our implemented IB prototype. The proposed solution, based on a feedback control and optimization loop, enables the lossless HPC network to dynamically adapt to the varying traffic patterns, current resource availability, workload distributions, and also in accordance with the service provider-defined policies.
- **Publication title:** A Survey on Data Storage and Placement Methodologies for Cloud-Big Data Ecosystem.
 - **Place of publication:** Springer Journal of Big Data
 - **Date of publication:** February 2019
 - **Publication type:** Journal Paper
 - **Author(s):** Somnath Mazumdar, Daniel Seybold, Kyriakos Kritikos, Yiannis Verginadis
 - **Outcome:** This survey paper provides a state-of-the-art overview of Cloud-centric Big Data placement together with the data storage methodologies. It is an attempt to highlight the actual correlation between these two in terms of better supporting Big Data management.
- **Publication title:** Mobile Edge as Part of the Multi-Cloud Ecosystem: A Performance Study
 - **Place of publication:** Proceedings of the 27th Euromicro International Conference on Parallel, Distributed and Network-Based Processing (PDP)
 - **Date of publication:** February 2019
 - **Publication type:** Conference Paper
 - **Author(s):** Thomas Dreiholz, Somnath Mazumdar, Feroz Zahid, Amir Taherkordi and Ernst Gunnar Gran
 - **Outcome:** The paper introduces a baseline performance evaluation in order to identify the fallacies and pitfalls of combining multiple cloud systems and MEC into a unified MEC-multi-cloud platform. For this purpose, the authors analyse the basic, application-independent performance metrics of average round-trip time (RTT) and average application payload throughput in a setup consisting of two private and one public cloud systems.
- **Publication title:** Cost Benefits of Multi-cloud Deployment of Dynamic Computational Intelligence Applications
 - **Place of publication:** Workshops of the International Conference on Advanced Information Networking and Applications
 - **Date of publication:** March 2019
 - **Publication type:** Workshop Paper
 - **Author(s):** Geir Horn, Paweł Skrzypek, Katarzyna Materka, Tomasz Przeździek
 - **Outcome:** This paper discusses the specific challenges of CI applications and provide calculations to show that dynamic use of Cloud resources will result in significant cost benefits for CI applications.
- **Publication title:** BData Center Clustering for Geographically Distributed Cloud Deployments
 - **Place of publication:** Workshops of the International Conference on Advanced Information Networking and Applications



- **Date of publication:** March 2019
- **Publication type:** Workshop paper
- **Author(s):** Dipesh Pradhan, Feroz Zahid
- **Outcome:** This paper proposes a data center clustering mechanism to group befitting cloud data centers together in order to automate data center selection tasks as governed by the application needs. Employing our clustering mechanism, the paper presents four different types of clustering schemes, with different importance given to available bandwidth, latency, and cloud costs between pair of data centers.
- **Publication title:** A Context-aware Service for Authorizing Multi-Cloud Deployments
 - **Place of publication:** Workshops of the International Conference on Advanced Information Networking and Applications
 - **Date of publication:** March 2019
 - **Publication type:** Workshop Paper
 - **Author(s):** Yiannis Verginadis, Ioannis Patiniotakis, and Gregoris Mentzas
 - **Outcome:** The paper discusses the requirements and introduce a novel attribute-based access control mechanism, able to cope with potential cybersecurity threats that may compromise the deployment of multi-cloud applications. The paper attempts to tackle the authorization issues from two different perspectives; namely, coping with the “access control” to various platform components and the “pre-authorisation” of application deployment and data placement actions using multiple cloud providers.
- **Publication title:** Towards an Optimized, Cloud-Agnostic Deployment of Hybrid Applications
 - **Place of publication:** International Conference on Business Information Systems
 - **Date of publication:** May 2019
 - **Publication type:** Conference Paper
 - **Author(s):** Kyriakos Kritikos, Paweł Skrzypek
 - **Outcome:** This paper extends the MELODIC platform in order to support the deployment and adaptive provisioning of hybrid, cross-cloud applications. Apart from analysing the architecture of the extended platform, it also explains what the relevant challenges are for supporting the management of serverless components and how we intend to confront them.
- **Publication title:** Towards the Modelling of Adaptation Rules and Histories for Multi-Cloud Applications
 - **Place of publication:** 9th International Conference on Cloud Computing and Service Science
 - **Date of publication:** May 2019
 - **Publication type:** Conference Paper
 - **Author(s):** Kyriakos Kritikos
 - **Outcome:** This paper proposes two extensions of the CAMEL language allowing to specify advanced adaptation rules and histories. Such extensions not only enable to cover cross-level application adaptation by executing adaptation workflows but also to progress such an adaptation to address both the application and exploited cloud services evolution.



- **Publication title:** Affine Scalarization of Two-Dimensional Utility Using the Pareto Front
 - **Place of publication:** IEEE International Conference on Autonomic Computing (ICAC)
 - **Date of publication:** June 2019
 - **Publication type:** Conference Paper and Poster
 - **Author(s):** Geir Horn, Marta Rózaska
 - **Outcome:** This paper proposes an approach that has the potential to reduce the number of possible deployment configurations to consider, namely the ones with least sensitivity to the weights used in the scalarization and demonstrates this approach for a small industrial application for the bi-criterion case, which is of practical importance as many real Cloud deployments aim to simultaneously minimizing the deployment cost utility dimension and maximizing the application performance utility dimension.
- **Publication title:** MELODIC: Selection and Integration of Open Source to Build an Autonomic Cross-Cloud Deployment Platform
 - **Place of publication:** International Conference on TOOLS 50+1: Technology of Object-Oriented Languages and System, Innopolis, Russia
 - **Date of publication:** October 2019
 - **Publication type:** Conference Paper
 - **Author(s):** G. Horn, P. Skrzypek, M. Prusinski, K. Materka, V. Stefanidis, Y. Verginadis
 - **Outcome:** The contribution of this paper is the discussion of approaches to integration and various options for large scale open source projects. Their evaluation shows that only a combination of an Enterprise Service Bus (ESB) with Business Process Management (BPM) for integration and control, and the use of a distributed Event Management Services (EMS) for creating context awareness, will provide the required stability and reliability. Consequently, the selection, the evaluation, and the design process of these three crucial components of the MELODIC platform were described.
- **Publication title:** Towards Understanding the Performance of Distributed Database Management Systems in Volatile Environments
 - **Place of publication:** International Symposium on Software Performance, Würzburg, Germany
 - **Date of publication:** November 2019
 - **Publication type:** Symposium Paper
 - **Author(s):** Daniel Seybold and Jörg Domaschka
 - **Outcome:** In this paper, we summarise our experiences with performance evaluation for cloud-hosted DBMS in order to find well-suited configurations for specific use cases. We demonstrate that the overall performance of a distributed DBMS depends on three major domains (workload, cloud environment and DBMS) with various parameters for each dimension.
- **Publication title:** Kaa: Evaluating Elasticity of Cloud-hosted DBMS
 - **Place of publication:** International Conference on Cloud Computing Technology and Science (CloudCom), Sydney, Australia
 - **Date of publication:** December 2019
 - **Publication type:** Conference Paper



- **Author(s):** Daniel Seybold, Simon Volpert, Stefan Wesner, Andr e Bauer, Nikolas Herbst and J rg Domaschka
- **Outcome:** The contribution of this paper is a comprehensive methodology for the evaluation of the elasticity of distributed DBMS. On the basis of this methodology, a framework is introduced that automates the full evaluation process. It is validated by defining significant elasticity scenarios for a case study that comprises two DBMS for write-heavy and read-heavy workloads of different intensities.
- **Publication title:** Towards an Integration Methodology for Multi-Cloud Application Management Platforms
 - **Place of publication:** IEEE/ACM International Conference on Utility and Cloud Computing Companion
 - **Date of publication:** December 2019
 - **Publication type:** Workshop paper
 - **Author(s):** Kyriakos Kritikos, Pawe  Skrzypek, Marta R zanska
 - **Outcome:** This paper proposes a novel methodology for selecting the best possible integration method and strategy for cloud platforms which enables addressing the previous challenges and producing platforms that can go beyond current competition.
- **Publication title:** Good Bye Vendor Lock-in: Getting your Cloud Applications Multi-Cloud Ready!
 - **Place of publication:** IEEE/ACM International Conference on Utility and Cloud Computing Companion
 - **Date of publication:** December 2019
 - **Publication type:** Tutorial
 - **Author(s):** Marta R zanska, Kyriakos Kritikos
 - **Outcome:** In this tutorial, attendees should be able to understand the benefits of the multi-cloud approach, and prepared to deploy their first managed multi-cloud application.

4.4 Scientific conferences and workshops

4.4.1 List of conferences and workshops

- European Conference on Advances in Database and Information Systems
 - Nicosia, Cyprus
 - 24-27/09/2017
 - Conference
 - Daniel Seybold
 - Presentation of the paper: "Is Distributed Database Evaluation Cloud-Ready?"
- Confederated International Conference - Symposium on Cloud and Trusted Computing
 - Rhodes, Greece
 - 23-28/10/2017
 - Conference
 - Daniel Seybold
 - Presentation of the paper: "Gibbon: An availability evaluation framework for distributed databases?"



- ACM/IFIP International MIDDLEWARE Conference
 - Las Vegas, USA
 - 11-15/12/2017
 - Conference
 - Daniel Seybold
 - Presentation of the paper: "Towards a framework for orchestrated distributed database evaluation in the cloud"
- IEEE International Symposium on Cluster Computing and the Grid (CCGrid)
 - Washington, USA
 - 01-04/05/2018
 - Conference
 - Daniel Baur
 - Presentation of the paper: "A provider
- IEEE (SMC) INISTA 2018
 - Greece
 - 3-5/07/2018
 - Conference
 - Yiannis Verginadis
 - Presentation of the paper: "Metadata Schema for Data-Aware Multi-Cloud Computing" and chairing of the MT4BD2 Special Session
- International European Conference on parallel and distributed computing (Euro-Par)
 - Turin, Italy
 - 27-31/08/2018
 - Conference
 - Daniel Seybold
 - Presentation of the paper: "The Impact of the Storage Tier: A Baseline Performance Analysis of Containerized DBMS"
 - -agnostic approach to multi-cloud orchestration using a constraint language"
- 7th European Conference on Service-Oriented and Cloud Computing
 - Italy
 - 12-14/09/2018
 - Conference
 - Yiannis Verginadis
 - Presentation of the paper: "Distributed Complex Event Processing in Multiclouds"
- ACM/IFIP International MIDDLEWARE Conference
 - Rennes, France
 - 10-14/12/2018
 - Conference
 - Daniel Baur
 - Presentation of the paper: "A provider agnostic approach to multi-cloud orchestration"
- Utility & Cloud Computing Conference (UCC'18)
 - Switzerland



- 17-20/12/2018
 - Conference
 - Daniel Baur
 - Presentation of the paper: "A Model Driven Engineering Approach for Flexible and Distributed Monitoring of Cross-Cloud Applications."
- AINA Workshops 2019
 - Japan
 - 27-29/03/2019
 - Workshop
 - Yiannis Verginadis
 - Presentation of the paper: "A Context-Aware Service for Authorizing Multi-cloud Deployments."
- First International Workshop on Recent Advances for Multi-Clouds and Mobile Edge Computing (M²EC 2019)
 - Japan
 - 27-28/3/2019
 - Workshop
 - Thomas Dreibholz, Feroz Zahid
 - Organizing the 1st International Workshop on Recent Advances for Multi-Clouds and Mobile Edge Computing (M²EC 2019)
- International Conference on Performance Engineering
 - Mumbai, India
 - 07-11/4/2019
 - Conference
 - Daniel Seybold
 - Presentation of the paper: "Mowgli: Finding your way in the DBMS jungle"
- CLOSER 2019
 - Greece
 - 2-4/5/2019
 - Conference
 - Kyriakos Kritikos
 - Presentation of the paper: "Towards the Modelling of Adaptation Rules and Histories for Multi-Cloud Applications"
- IEEE/ACM International Symposium in Cluster, Cloud, and Grid Computing (CCGrid 2019)
 - Larnaca, Cyprus
 - 14-17/05/2019
 - Conference
 - Feroz Zahid, Geir Horn, Kyriakos Kritikos, Marta Różanska, Anna Wyszomirska
 - Presentation of the tutorial: Good Bye Vendor Lock in: Getting your Cloud Applications Multi-Cloud Ready!
- Workshop on Cross Cloud Infrastructures & Platforms
 - Larnaca, Cyprus



- 14/05/2019
 - Workshop
 - Marta Różanska
 - Invited talk, Keynote: "The need for a universal platform for optimized multicloud deployment"
- IEEE International Conference on Autonomic Computing
 - Umea, Sweden
 - 16-20/06/2019
 - Conference
 - Geir Horn, Marta Różanska
 - Presentation of the paper: "Affine Scalarization of Two-Dimensional Utility Using the Pareto Front"
- Utility & Cloud Computing Conference (UCC'19)
 - New Zealand
 - 02-05/12/2019
 - Conference
 - Marta Różanska, Alicja Reniewicz, Daniel Seybold
 - Presentation of the tutorial: Good Bye Vendor Lock in: Getting your Cloud Applications Multi-Cloud Ready!
- International Conference on TOOLS 50+1
 - Russia
 - 14-19/10/2019
 - Conference
 - Pawel Skrzypek
 - Presentation of the paper: "MELODIC: Selection and Integration of Open Source to Build an Autonomic Cross-Cloud Deployment Platform"
- International Conference on TOOLS 50+1
 - Russia
 - 14-19/10/2019
 - Tutorial
 - Paweł Skrzypek, Marta Różańska, Alicja Reniewicz
 - Organizing a tutorial on MLEODIC, entitled: "Good Bye Vendor Lock-in: Getting your Cloud Applications Multi-Cloud Ready!"
- MELODIC workshop for academic (Warsaw University of Technology) and industry (OPEGIEKA, CloudFerro) partners in Poland
 - Poland
 - 25/11/2019
 - Workshop
 - G. Horn, Y. Verginadis, P. Skrzypek, T. Przeździek
 - The opportunity to attract new adopters to MELODIC during a workshop introducing MELODIC platform including e.g. live demo with technical presentation and the



distributed monitoring system in the MELODIC platform. The networking event aiming at establishing new collaboration in European research and commercial projects, e.g. CENAGIS, around MELODIC and big data processing in the Cloud.

- International Conference on Cloud Computing Technology and Science
 - Sydney, Australia
 - 11-13/12/2019
 - Conference
 - Daniel Seybold
 - Presentation of the paper: "Kaa: Evaluating Elasticity of Cloud-hosted DBMS"
- Symposium on Software Performance
 - Würzburg, Germany
 - 04-06/11/2019
 - Conference
 - Daniel Seybold
 - Presentation of the paper: "Towards Understanding the Performance of Distributed Database Management Systems in Volatile Environments"

4.5 Summary of Scientific Dissemination

The research related to the MELODIC platform has been disseminated in more than 25 scientific events, including workshops, conferences, and tutorials. For some events like tutorials, not only one person but also people from different partners were present in the venue to teach and demonstrate cross-cloud data intensive computation model based on the MELODIC solution. The most scientific dissemination activities are related to conference paper presentation (14 papers) in relevant and credible conferences. 5 workshop papers and 2 symposium papers were published to present early results of the project. 2 tutorials were successfully organized, and 3 journal papers have been published.

4.6 Publications statistics

Table 2 Publications statistics

Author(s)	Affiliation	Number of publications	Type (c: conference, j: journal, t: tutorial, w: workshop, s: symposium)
Kyriakos Kritikos	Simula	7	t, c, j
Marta Różanska	7bulls	3	t
Paweł Skrzypek	7bulls	4	w, c
Daniel Seybold	UULM	8	c, s, j, w
Jörg Domaschka	UULM	6	c, s, w
Geir horn	UiO	6	c, w, j
Katarzyna Materka	7bulls	2	c, w
Yiannis Verginadis	ICCS	7	c, w, j
Ioannis Patiniotakis	ICCS	4	w, c
Gregoris Mentzas	ICCS	3	w, c



Dipesh Pradhan	Simula	1	w
Feroz Zahid	Simula	4	w, j, c
Tomasz Przeździeń	CE-Traffic	1	w
Thomas Dreibholz	Simula	1	c
Somnath Mazumdar	Simula	2	c, j
Amir Taherkordi	UiO	3	c, j
Ernst Gunnar Gran	Simula	2	j, c
Daniel Baur	UULM	2	c

5 Summary

This deliverable reports on the comprehensive dissemination and communication activities of MELODIC for the project month 4-36. It reports on communication activities including industry events, workshops, direct meetings and social media. In addition, it provides the statistics for communication events. Finally, the objectives of dissemination activities, as well as the list of publications made by MELODIC partners are purported in Section 4. It should be noted that the project has been running with great success in dissemination of the project results in relevant venues, in addition to the fact that the consortium has been able to attract the real interest of the industry sector through the reported communication activities.

