



## D3.1 Customer Feedback Methodology Version 3.2

### Document Information

<b>Contract Number</b>	824080
<b>Project Website</b>	<a href="http://www.pop-coe.eu">www.pop-coe.eu</a>
<b>Contractual Deadline</b>	M3, February 2019
<b>Dissemination Level</b>	Public
<b>Nature</b>	Report
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<b>Reviewer</b>	UVSQ
<b>Keywords</b>	Customer satisfaction assessment process



**Notices:**

*The research leading to these results has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No "824080".*



## Change Log

Version	Author	Description of Change
V0	Teratec	Initial version
V1	Teratec	Taking NAG's and JSC' remarks into account, in particular regarding ethics
V2	Teratec	Taking remarks from internal reviewer (UVSQ) and from BSC into account + updates linked to the replacement of SurveyMonkey by EUSurvey
V3	Teratec	Final update (taking into account UVSQ remarks)
V3.1	Teratec	Add a note concerning privileges to access the surveys (in test mode)
V3.2	Teratec	Taking BSC's remarks about personal data into account



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## Executive Summary

The purpose of **WP3 - Customer Advocacy** is to verify that the activities of the project are really performed to the full satisfaction of the customers. It also represents the User (Customer) in the process of governance. Therefore, the Customer Advocate will collect feedback from Users and influence the operations of the project in order to achieve its KPI target of 90% Customer Satisfaction.

This deliverable describes the methodology we will apply to achieve these objectives and includes the questionnaire we will use to collect feedback from POP customers.

The customer feedback methodology we will apply in POP2 is an update of the methodology used in POP1 taking into account the changes in the overall POP process (e.g. there is no more Performance Plan) and the lessons learnt during POP1, in particular regarding the collect of data to measure the Return on Investment. For this, the questionnaire regarding the effort spent to refactor the application and the resulting gains has been completely redesigned to enable to get more precise data. It asks more details about:

- the effort and the cost to prepare and run the performance analysis with the POP expert, and then to refactor the application,
- the actual performance improvement of the application and the main impacts of this performance improvement,
- the financial gains obtained over one year in various ways (e.g. by saving energy or reducing the cost of cloud services; by enabling to produce better products/processes/services; by achieving a shorter time-to-solution, thus increasing productivity; or by selling better solutions).

So, with these data, we should be better equipped to push forward the understanding of the benefits of HPC and of the POP services to industry.

## 1. Introduction

Collecting customer feedback is key to ensure the quality and efficiency of the various services the POP Centre of Excellence is poised to offer. So, throughout the project, each time a POP service will be completed with a report describing the results of the performance analysis, or of the proof-of-concept, as well as the associated recommendations to evolve the code, we will ask the customer to fill in the appropriate satisfaction questionnaire, and, when needed, will manage to get more details with an interview. Then, it is our responsibility to compile and analyse their answers, elicit findings, and present them to the Project Executive Board who should evolve the services accordingly, bearing in mind that the POP CoE should be self-sustainable after the project ends.

In section 2, after recalling the overall POP process and the various types of services the POP Centre of Excellence offers, we present the methodology



we have designed to collect data regarding customer satisfaction, to process them, and to steer the enhancement of these services.

Then, in Annex, we give the entire contents of the various surveys to be used.

## 2. Customer Satisfaction Methodology

The customer satisfaction methodology will encompass various ‘post sales’ activities that should enable to measure the quality and efficiency of the POP services.

### 2.1 Brief reminder of the overall POP process

The activities of the customer satisfaction methodology are closely associated with the **overall POP process**, which involves the following steps:

- 1) Invite potential customers to fill in the simple Request Service Form available on the POP website<sup>1</sup> where the user accepts the terms and conditions of the service<sup>2</sup>.

*This first questionnaire acts as a filter to guarantee that POP can achieve the requested service to the customer. Nevertheless, more information is required before assigning the service to one of the POP partners/experts.*

- 2) Contact the customer and collect more information by using the Questionnaire on User Needs<sup>3</sup>.

*Note: This questionnaire which is managed by WP5 – Performance Assessment is also to be evolved for POP2 in order to collect more usage data (e.g. How critical is the performance of the application? How many times is it run per week? How many organisations run it? Which kind and level of improvement is expected or would have a significant impact? etc.) so that WP5 management can establish priorities and WP3 get more solid foundations to measure ROI.*

- 3) Assign the partner/expert and tools to be used based on the collected information and the current workload of each partner/expert.
- 4) Perform the Performance Assessment service.

*A kind of health check for the code diagnosing the efficiency achieved on different aspects (parallelization, load balance, IPC, data transfer...)*

- 5) Analyse the performance data collected and suggest areas for improvement documenting the results and making recommendations in the Assessment Report.

*The recommendations may suggest some aspects where a deeper study may be beneficial (i.e. a Proof of Concept).*

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<sup>1</sup> <https://pop-coe.eu/request-service-form>

<sup>2</sup> [https://pop-coe.eu/sites/default/files/public/popw1/POP\\_Terms\\_and\\_Conditions.pdf](https://pop-coe.eu/sites/default/files/public/popw1/POP_Terms_and_Conditions.pdf)

<sup>3</sup> <https://pop-coe.eu/form-on-user-needs>



6) If requested, perform the Proof of Concept service.

*This consists in identifying a critical and representative part of the audited code, experimenting with different parallelization and optimization approaches to identify the most efficient type of modification, and demonstrate it on the selected portion of code before recommending the customer to apply the same type of modification to the rest of the application.*

7) The customer implements POP experts' recommendations and measures the performance improvement.

To ensure that the project activities are performed to the full satisfaction of the customers, the POP project will collect their feedback in various ways, measure key performance indicators (KPI), and last but not least provide findings to the POP Operational Review meetings.

## 2.2 The Surveys

The main component of the customer satisfaction methodology is a set of customer satisfaction surveys, which are closely associated with the overall POP process.

In POP1, we used five questionnaires, regarding respectively the Performance Audit, the Performance Plan, the Proof-of-Concept, the Performance Analysis Tools, the resulting gains (ROI) for the customer.

For POP2, the questionnaires have been significantly revised considering:

- The evolution of the POP process, in particular the fact that the Performance Audit and the Performance Plan services have been merged in a unique service called Performance Assessment.
- The fact that the questionnaire on Performance Analysis tools is no longer considered as part of the Customer Advocacy work-package.
- The lessons learnt in POP1, in particular the need to collect more details about:
  - The costs spent by the customer to provide the POP expert with the appropriate use cases, to (help) install the performance analysis tool, to grant access to POP expert to the infrastructure, etc.
  - The actual performance improvement of the application and the corresponding benefits.
  - The resulting financial gains per budget item.

These data should enable us to compute the Return on Investment on more realistic data and then describe more convincing experiences to make industrial actors more confident about the benefits of HPC and, above all, about the benefits they can gain from POP services.

Therefore, we now have only three surveys:

- Two of them are related to POP services (one for each type of service):
  - Performance Assessment
  - Proof of Concept



- One regarding the evaluation of the performance improvement and of the resulting gains in order to measure the global Return on Investment

While the surveys regarding the Performance Assessment and the Proof-of-Concept services are mainly targeted to measure the customer satisfaction concerning the way these services are delivered, the third survey focuses on measuring the benefits gained by the organisation from the performance improvement compared to the total cost of effort spent to assess and refactor the code. The results of this survey are quite critical as input to **WP2 - Business Development and Sustainability** where we have to define and setup a perennial performance assessment business (type of services, financial arrangements, type of structure ...).

These surveys are implemented on EUSurvey (a Survey tool made available by the European Commission). It is a web-based service allowing the creation of surveys in a pretty efficient way and providing an interesting administration interface with graphs and exportations capabilities in various formats for external statistics or publication.

Each customer having received a service report during the past month will be invited to fill in the corresponding questionnaire.

These questionnaires don't ask for actual personal data. They only ask for the Performance Assessment report number (POP-AR-*nnn*) or Proof-of-Concept report number (POP-PoCR-*nnn*) and the Application name.

Moreover, as mentioned in the POP Service Terms and Conditions, POP undertakes that all the data gathered will be anonymised before publication, and that we will not publish any other information concerning the service that we are providing to customers without their explicit permission (Each POP customer filling in a questionnaire is asked to give or not informed consent for publication). This is clearly stated in the introduction of each questionnaire with a link to the [Terms and Conditions](#) and to the [Data Privacy Policy](#) of the POP project.

A report summarising the number of questionnaires sent during the last period as well as a summary of the feedback will be reported at the monthly telecom meeting, flagging up any possible issues.

Before each quarterly General Assembly, the results of these surveys will be compiled and anonymised in a pdf document which will be distributed to all POP experts together with a set of recommendations to enhance the services they provide. Moreover, a statistic analysis will enable to give an overall view of the feedback received over the last period. All this to be discussed during the General Assembly.

Details of these surveys can be found in Annex.

## 2.3 Customers interviews

Besides this, we will also continue to **interview customers** each time the case looks interesting or when it appears that more detailed information



should be collected. These interviews are done either by phone, video conference, or face-to-face meeting.

As per the Grant Agreement “Data collected interviews will be depersonalised to remove references to names and emails after collection and before processing by use of respondent IDs.”

To help us carry out these interviews, we have prepared a list of questions to be sure to ask about every important point. Hereafter, we list all points that should be clear to us. But, each time the user has already given an explicit answer (e.g. in a questionnaire) we will of course skip it.

### **2.3.1 Questions regarding the Performance Assessment**

- How did you know about POP?
- Are you a developer of the code and/or a user?
- Can you tell me about you, the code, and the team that wrote the code?
  
- Could you explain me how the performance analysis went?
- Was the performance analysis realized in a reasonable time?
- Was there any complexity to manage during the performance analysis? (Infrastructure, application, environment, data, etc)
- Were the use-cases and input data real ones?
- How went the code instrumentation and the output data retrieval?
- Did you use the performance analysis tools by yourself?
- Was the performance analysis context the same as the production one?
- If you would have to change something to the audit, what would it be?
- Did you start to modify your code or do you have a plan to modify it?
- If yes, when do you expect to have all needed modifications done?
- Do you plan to apply for a Proof of Concept? Is it already in progress?
  
- Was there something missing in the report from your point of view?
- Was there something superfluous in the report from your point of view?
- If you would have to change something in the rapport, what would it be?
- Were the figures/graphics sufficiently clear/explained?
  
- Do you have other applications you would like to assess?

### **2.3.2 Questions regarding the Proof of Concept**

- Could you explain me how the Proof of Concept went?
- How were you asked or proposed to realize the PoC?
- Was the PoC realized in a reasonable time?
- Did you experience some problems during the PoC? (for instance to manage the infrastructure, the application, the data)
- Was the PoC context the same as the production one?
- If you would have to change something to the PoC, what would it be?
- Do you plan to implement the PoC recommendations? In which timeframe?



- What is, for you or for your organization, the major impact of this Performance Assessment and Proof-of-Concept?
- Would you recommend the POP Services to someone else?
- What would be the best advice, from your point of view, to POP for the improvement of its services?
- Would you/or your organization be ready to pay for such a service? (the actual cost has been estimated to approx. 15k€)?

### **2.3.3 Questions regarding the Return on Investment**

- How were computed the figures you gave us in the survey?
- Can you tell us more about the effort spent to refactor the code?
- How did you measure the various types of gains / added value?
- Would you say that the reported gains are rather below or above the reality?
- Does this Return on Investment appear to be reasonable to your management?
- Would you be ready to pay for assessing other applications and how much?

As for the surveys, a compilation of these interviews, will be regularly distributed to POP experts so that they can adapt and enhance the service accordingly, while detailed information about Return on Investment are quite important for WP2 – Business Development and Sustainability.



## Annex: Customer Satisfaction Surveys

This Annex presents the details of our three questionnaires.

These questionnaires which are implemented with the EUSurvey tool contain a series of questions which are numbered, and for some of them, a complementary question that EUSurvey pops up only when the box corresponding to a given answer has been ticked.

For instance, when asked about the need for training, if the customer answers 'Yes', then a complementary question pops up; '*Which kind of training does your team needs*'. This is quite interesting because the customers are not puzzled by questions of no interest for them.

However, in the following pdf files describing the questionnaires, all questions are of course visible but we can generally easily imagine which answer triggers a complementary question.

You can test these questionnaires, provided, you have an EU Login and the appropriate privileges (see note below), by going respectively to:

- <https://ec.europa.eu/eusurvey/POP-Perf-Assess-Eval/management/test>
- <https://ec.europa.eu/eusurvey/POP-PoC-Eval/management/test>
- <https://ec.europa.eu/eusurvey/POP-ROI-Eval/management/test>

**Note:** In case, you don't have the required privileges, please send an email to [pop-surveys@teratec.eu](mailto:pop-surveys@teratec.eu)



# POP Performance Assessment Evaluation

Fields marked with \* are mandatory.

## Welcome and thank you in advance for answering this survey

This survey is intended to assess the quality of the **Performance Assessment service** which has been carried out by POP experts to help you optimise your application.

As stated in the [Terms and Conditions](#), if you become a POP user you agree to give us feedback on the quality of the service you obtain from POP, and grant us permission to publish statistical information on the percentage of potential performance improvement, the potential savings and other equivalent metrics that measure the results and impact of the POP service. POP undertakes that all such data will be anonymised before publication, and that we will not publish any other information concerning the service that we are providing to you without your explicit permission. For more details please see our full [Data Privacy Policy](#).

**Your feedback is quite important** because it will help us to improve the quality and efficiency of the POP services.

\* 1. Report Reference Identifier

POP\_AR\_nnn (Indicated on the front page of the Performance Assessment Report)

\* 2. Application name

\* 3. Who collected the performance analysis data?

- Yourself
- Yourself with the help of a POP performance analysis expert
- A POP performance analysis expert

\* 4. How was this Performance Assessment carried out?

- Very efficiently

- Rather efficiently (no major problem)
- Rather difficult (e.g. unreasonable delay, unexpected constraints, ...)
- Poorly conducted

Could you say why?

\*5. How did you find the Performance Assessment Report?

- Clear and easy to understand
- Somewhat difficult to understand
- Not at all clear

Could you say why?

\*6. Did the recommendations just confirm what you knew from a previous analysis or by experience?

- Yes
- No, I didn't suspect some of the problems revealed by this assessment
- No, because I had no idea about possible problems

Which problems were unexpected?

- Inefficient use of simultaneous threads
- Lack of (or inefficient) use of vectorization
- Inefficient use of memory
- Inefficient communications (MPI, I/O, ...)
- Poor scalability
- Load imbalance
- Other (please specify)

Which other problems?

\*7. How much effort was required from you to complete this Performance Assessment? (rough estimate of person days/months)

\*8. Did POP fulfil your expectations?

- Entirely
- Partly
- Not enough
- Not at all

Any suggestions for improvement of the Performance Assessment?

- \*9. Overall, are you satisfied with this assessment?
- Very satisfied    Satisfied    Partly satisfied    Not Satisfied

Could you say why?

- \*10. Are you happy for POP to publish the results of the Performance Assessment?

Note: You will be able to review any article before it is published.

- Yes    Yes, under certain conditions    No

Under which conditions (in addition to the review of the article before publication)?

- \*11. Would you be interested in receiving any training?

- Yes    No

Which kind of training does your team need?

- \*12. Are you interested in a Proof-of-Concept service? (to better understand how your application can be refactored to address some of the issues found in the Performance Assessment)

- Yes  
 No, I have got enough information

- \*13. Do you have a plan to modify your code (taking into account the recommendations that have been proposed) ?

- Yes  
 Not yet  
 No, we don't plan to modify our code

When approximately, do you expect to have all needed modifications done and validated?

Please enter a date in the following format (DD/MM/YYYY)

- \*14. Do you have other applications for which a Performance Assessment would be useful?

- Yes

No

How many and when do you plan to get them assessed?

\* 15. Based on this experience, would your organisation be prepared to pay for a Performance Assessment service in the future? (After the end of the European Commission funded POP project.)

Yes  Not sure  No

About how much could you or would you be willing to pay for this service?

Taking as reference the sum your organisation is used to paying for other expert services

\* 16. Would you recommend the POP service to your colleagues?

Yes  Possibly  No

**Thank you very much.**



# POP Proof of Concept Evaluation

Fields marked with \* are mandatory.

## Welcome and thank you in advance for answering this survey

This survey is intended to assess the quality of the **Proof of Concept (PoC) service** which has been carried out by POP experts to help you optimise your application.

As stated in the [Terms and Conditions](#), if you become a POP user you agree to give us feedback on the quality of the service you obtain from POP, and grant us permission to publish statistical information on the percentage of potential performance improvement, the potential savings and other equivalent metrics that measure the results and impact of the POP service. POP undertakes that all such data will be anonymised before publication, and that we will not publish any other information concerning the service that we are providing to you without your explicit permission. For more details please see our full [Data Privacy Policy](#).

**Your feedback is quite important** because it will help us to improve the quality and efficiency of the POP services.

\* 1. Report Reference Identifier

POP\_PoCR\_nnn (Indicated on the front page of the Proof of Concept Report)

\* 2. Application name

\* 3. How was this Proof of concept carried out?

- Very efficiently
- Rather efficiently (no major problem)
- Rather difficult (e.g. unreasonable delay, unexpected constraints, ...)
- Poorly conducted

Could you say why?

\*4. How did you find the Proof of Concept Report?

- Clear and easy to understand
- Somewhat difficult to understand
- Not at all clear

Could you say why?

\*5. How much effort was required from you to complete this Proof of Concept? (rough estimate of person days/months)

6. Did POP fulfil your expectations?

- Entirely
- Partly
- Not enough
- Not at all

Any suggestions for improvement of the Proof of Concept service?

\*7. Overall, are you satisfied with this Proof-of Concept?

- Very satisfied
- Satisfied
- Partly satisfied
- Not Satisfied

Could you say why?

\*8. Are you happy for POP to publish the results of this Proof of Concept?

Note: You will be able to review any article before it is published.

- Yes
- Yes, under certain conditions
- No

Under which conditions (in addition to the review of the article before publication)?

\*9. Would you be interested in receiving any training?

- Yes
- No

Which kind of training does your team need?

\* 10. Do you have a plan to modify your code (taking into account the recommendations that have been proposed) ?

- Yes
- Not yet
- No, we don't plan to modify our code

When approximately, do you expect to have all needed modifications done and validated?

Please enter a date in the following format (DD/MM/YYYY)

\* 11. Do you have other applications for which a Performance Assessment or a Proof of Concept would be useful?

- Yes
- No

How many and when do you plan to get them assessed?

\* 12. Based on this experience, would your organisation be prepared to pay for a Proof of Concept service in the future? (After the end of the European Commission funded POP project.)?

- Yes
- Not sure
- No

About how much could you or would you be willing to pay for this service?

Taking as reference the sum your organisation is used to paying for other expert services

\* 13. Would you recommend the POP service to your colleagues?

- Yes
- Possibly
- No

**Thank you very much.**



# POP Performance Improvement ROI Evaluation

Fields marked with \* are mandatory.

## Welcome and thank you in advance for answering this survey

This survey is intended to collect data enabling us to evaluate:

1. The **total cost of effort** spent to assess the performance of your application; to identify how the code could be improved; and to implement the recommended modifications.
2. The **total gain** resulting from this refactoring.

We can then measure the **Return on Investment** (total gain / total cost of effort).

As stated in the '[Terms and Conditions](#)', if you become a POP user you agree to give us feedback on the quality of the service you obtain from POP, and grant us permission to publish statistical information on the percentage of potential performance improvement, the potential savings and other equivalent metrics that measure the results and impact of the POP service. POP undertakes that all such data will be anonymised before publication, and that we will not publish any other information concerning the service that we are providing to you without your explicit permission. For more details please see our full [Data Privacy Policy](#).

**Your feedback is quite important** because it will help us to improve the quality and efficiency of the POP services.

### \* 1. Report Reference Identifier

POP\_AR\_nnn (Indicated on the front page of the Performance Assessment Report)

or

POP-PoCR-**nnn** (Indicated on the front page of the Proof of Concept Report)

### \* 2. Application name

### \* 3. Did you implement all the modifications that were recommended by POP experts?

- Yes, all of them
- Only a part of them

Could you say why?

\*4. Did you also add new features or evolve some of the algorithms while refactoring the code of your application?

- Yes  No

***If yes, please do your best, while answering the following questions to report only code refactoring costs and associated gains from the POP recommendations.***

\*5. How much effort was necessary to refactor your application?  
(i.e. implement the modifications that were recommended by POP experts)

- A few person days  
 A few person weeks  
 A few person months

Could you specify the effort you spent more precisely (e.g. 3 person days)?

Could you specify the effort you spent more precisely (e.g. 2 person weeks)?

Could you specify the effort you spent more precisely (e.g. 1 person month)?

\*6. What is approximately the total cost of this effort (in K€)?

7. What improvements have you benefited from due to POP?

You can tick several boxes

- Better scalability  
 Ability to add more complexity or extra features  
 Ability to run larger problems  
 Improved workflow by reducing runtime  
 Reduced hardware costs  
 More knowledge and awareness of performance profiling  
 Other

Could you specify other improvements POP brought to your organisation

\*8. What reduction in runtime did you obtain from the refactoring of your application?

- < 10%
- 10% - 25%
- 25% - 50%
- > 50%
- Other

Could you please specify an indicative runtime before and after the refactoring

\*9. Do you know the cost of the computing power your application uses and who pays for it?

- Yes I know the cost and our department pays for it.
- Yes I know the cost and it is included in our computing center costs.
- No, I don't know

\*10. How does your organisation benefit from the performance improvement of your application?

You can tick several boxes

- We use this application for our own business (e.g. to develop/enhance our products, our processes, and/or services)
- We use this application to provide modelling/simulation services to our customers
- We, as a software vendor, sell application software licenses

Could you give an estimate of the financial gain obtained by your organisation per budget line-item?  
(by using your improved application for your own business)

	Financial gain over one year (in K€)
Money saved using less energy (computing power), reduced cost of cloud services, etc.	
Benefits from faster time-to-solution (e.g. enhanced productivity)	
Benefits from exploiting the improved application (e.g. able to deal with more detailed, more complex, or larger models) to develop better products that generate higher earnings.	
Other benefits	

Could you give an estimate of the financial gain obtained by your organisation per budget line-item?  
(by using your improved application to provide modeling/simulation services to your customers)

	Financial gains over one year (in K€)
Money saved using less energy (computing power), reduced cost of cloud services, etc.	
Benefits from faster time-to-solution (e.g. enhanced productivity)	
Benefits from providing better services (selling them at a higher price, or being able to sell more services, or getting more customers)	
Other benefits	

Could you give an estimate of the financial gain obtained by your organisation per budget line-item?  
(by selling your improved application as a software vendor)

	Financial gains over one year (in K€)
Benefits from selling a better solution (selling your improved software license at a higher price and/or extending your market)	
Other benefits	

\* 11. Is this application also used by other organisations?

- Yes
- No

Do you know how many other organisations run this application?

To the best of your knowledge, these other organisations on average obtain

- less gains than your organisation
- about the same gains as your organisation
- more gains than your organisation

**Thank you very much.**