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EUROPEAN COMMISSION
EUROPEAN RESEARCH EXECUTIVE AGENCY

REA.C – Future Society
C.1 – Inclusive Society

GENERAL PROJECT REVIEW CONSOLIDATED REPORT

Grant agreement (GA) number:	101004469
Project[1] Acronym:	ODEUROPA
Project title:	ODEUROPA: Negotiating Olfactory and Sensory Experiences in Cultural Heritage Practice and Research
Type of action:	RIA
Start date of the project:	01/01/2021
Duration of the project:	36
Name of primary coordinator contact and organisation:	Inger Leemans (KNAW)
Period covered by the report:	from 01/01/2022 to 31/12/2023
Periodic report/Reporting period number:	Final
Date of first submission of the periodic report (if applicable):	10/03/2024
Amendments (latest AMD concerning description of the action)[2]	09/10/2023 (AMD-101004469-11)
Date of meeting with consortium (if applicable):	15/03/2024 - 15/03/2024
Name of project officer:	Hinano SPREAFICO
Name(s) of monitors:	– Petya Georgieva KOLEVA • REA • Intercultura Consult • World Bank Georgia I2Q HE - IBF International Consulting SA – Nicola Ferro • University of Padua • University of Padua • University of Padua

[1] 'Project' means the same thing as 'action'.
[2] Only amendments to the description of the action (DoA; AT21) are relevant for general project reviews since they always have to be carried out against the latest version of the DoA

1. Overall assessment

1. Overall assessment
Project has fully achieved its objectives and milestones for the period.
2. Significant results linked to dissemination, exploitation and impact potential
Project has delivered exceptional results with significant immediate or potential impact (even if not all objectives mentioned in the Annex 1 to the GA were achieved). The project has achieved several significant results in key areas related to its objectives: • Technical results: the European Olfactory Knowledge Graph and the related knowledge base; the tools for text and image processing as well as the corresponding datasets; the methods for the digitisation of scents. All of them are publicly available, via the Web site, GitHub and Zenodo, and constitute concrete outcomes of the project with direct impact on stakeholders. • Stakeholder results: the project reached out to several CH institutions and professionals, delivering them best practices and training them how to organize events involving smells; the project also reached out to other stakeholders as industry and policy makers. These activities are likely to have a very significant impact in the future. • Dissemination and exploitation results: several events have been organized, involving a wide inter-disciplinary community, CH institutions, and the general public; the project has also succeeded in communication by attracting a substantial and continuous media coverage on a global scale. These results have an immediate impact in terms of dissemination and are likely to have a significant impact also in terms of exploitation. More in detail, the project has achieved results with significant impact in particular in dissemination that have reached, and in some cases exceeded the different KPIs in the Dissemination and Communication plan. For instance, presentations reached an audience of around 10,000 people (D7.6 Impact Activities Report Y2 and Y3). The project has been promoted at a Chemistry conference, Data science events and been integrated in training events for the GLAMs incl. events in Germany, Netherlands, France, Spain, Slovenia, including NL Heritage Foundation and collaboration with EUROPEANA. This project GA had for foreseen an obligation on the part of the consortium to seek commercial exploitation of results. This might be a partial justification for the fact it has not developed a business plan to exploit any asset such as based on historical research leading to the design of a scent formula. However, similar projects have demonstrated the possibility of developing their own formula which led to benefits for the respective GLAM institutions, such as attracting larger and different audiences as well as very high media recognition. Some of them were also part of the questionnaire validating the added value that reached a respondent group of 2415 including olfactory events in Jorvik Viking Centre, Bodleian Library, Kunstmuseum Den Haag, Museo del Prado, Louvre Museum and Rainham Hall. The expressed commitment of its core industry partners (subcontractor (IFF), (OPC) perfumers / scent developers, Olfasense, ISCENT) to explore the opportunities for new business lines has not been fulfilled and no alternatives have been found to date by the partners. It is not very evident that a foreseen creation of a business plan as part of the 'Entrepreneurial hackathon' (T7.10) had taken place as this is not reported in the Deliverable D7.5 Impact Events Report Y3. IPR – In view of bypassing the barrier on shared ownership of the fragrance formula, the team worked on developing practise-based strategies for co-creation with large fragrance firms. In its final phase, the project had 19 scents designed of which 14 are owned by the industry partner (IFF) and others are mid-stage results. The project has concluded this work by integrating a Historical Scent Collection of 12 in its 'Heritage toolkit' (produced in 300 units) with recommendation for similar collaboration of fragrance/perfume industry and academia (heritage science) to consider developing an open-source instruction as a pathway to build a formula. This set is also deposited in the Archive for Osmothèque Conservatoire International des Parfums Versailles for the next 17 years. The scents have not been commercialised also in view of the estimated high costs of the value chain considered rather big for it to arrive at a product for this niche market (e.g. Museum sector). A precise description of ingredients is possibly advisable to disclose to the research and GLAM sector community. The project has achieved an ESCC award recognition as well as produced the 1st peer-review of a CH scent based on an Olfactory component, starting a Heritage Smell Library and other activities.

To keep its momentum, the positive prospects for the consortium and the Odeuropa Network include the setting up of a team to draft a proposal for the MCS-DN application which is foreseen in 2024 as well as several spin-off research projects.

Lasting traces and impact of the proposal include the fact it has developed its output with open access mode; the accessibility of the models on ZENODO, at github for the software as well as a foreseen 5-year storage live maintenance for all online demonstrators, including website and the Smell Explorer by ECCROM.

3. General comments

The project has fully achieved, and exceeded in some respects (dissemination, communication), all its objectives and delivered what planned in the DoA, in terms of both deliverables and milestones. In this respect, it can be considered a very successful project, innovating the state-of-the-art and laying foundations in the less explored area of scents and smells. The project successfully worked using a multi-disciplinary approach (computer science, humanities, heritage science, social sciences, museology, chemistry) and involving researchers, experts, stakeholders (GLAMs, industry) and the public in a variety of tasks, activities and events. The project has adapted successfully to challenges of the pandemic developing events which could be self-guided, app-based smell tour. It also built on feedback to upgrade based on insight its conceptual frameworks and scope of relevance. For example, moving from image and text mining objects to gestures and emotions. The consortium also put substantial effort in reaching out to targeted users and gathering their feedback. More in detail:

• Objective 1 (identifying and tracing olfactory references): development and evaluation of image and text analytics tools for information extraction; development of image and text annotated datasets; release of both code and datasets on GitHub and Zenodo; organization of the Computer Vision challenge ODOR at ICPR 2022 and the MUSTI challenge at MediaEval 2022 and 2023. In addition, testing the models' expansion from object detection to gestures and emotions in the recognition of olfactory iconography and fragrant places have been a moderate success.

• Objective 2 (digital and multi-sensory resources, data and storylines): design and development of the European Olfactory Knowledge Graph (EOKG, v2) and population of the corresponding knowledge base, with both texts and images, accessible via a dedicated Web application (Smell Explorer), APIs, demonstrator, and as data; development of the Encyclopedia of Smell History and Heritage, available online.

However, at the final review meeting, the Encyclopaedia of Smell History and Heritage features a modest N of entry result (34) and only in English, which is not offering full credit to the potential of the WP cross-integration. An additional shortcoming is that the ambition to also establish links among demonstrators in view of expansion of the developed Encyclopaedia of Smell History and Heritage tool to function in offering accessible, ready to use, perspectives on how semantic, visual and textual references relate to Intangible and Tangible CH across the same period in the 7 language reference databases in correspondence with the Odeuropa Smell Explorer tool is not fully exploited. A particular drawback is that different demonstrates use separate thematic semantic groups that appear arbitrary instead of carefully defined for all 7 language sources or image data sources. On a positive note, the purpose of demonstrating its potential is successful. An analysis of users and their profile and needs, once all tools are rendered into open-access, open-sources mode would be highly beneficial for lasting impact on the research and industry communities.

• Objective 3 (standards and best practices): the project has achieved its objectives in providing measurable standards and best practices for olfactory heritage science on the key target groups of specialised researchers (e.g. establishing an Odeuropa network) and general CH stakeholders from the GLAMs sector; the value and impact questionnaires have been collected from many stakeholders in the area; two use cases (Frankincense and Queen Elisabeth II's car) have been explored for digitising, and re-materializing scents; the Olfactory Storytelling Toolkit (OST) has been prepared for cultural heritage institution and professionals; The Heritage Smell Library;

• Objective 4 (educate and train CH professionals): the Olfactory Storytelling Toolkit (OST) represent a valuable and concrete resource for CH professionals on how to manage and organize events including smells; the project partners directly trained many professionals via the events co-organized by the project; an online teach module, co-created with the American Historical Review and available through the Web site, has been prepared. Moreover, the OST already promises significant impact in the future via the established networks and visibility of the project as well as additional dissemination events in 2024 (e.g. Keynote for the World Perfumery Conference 2024 (Geneva,Switzerland) as well as possible exploitable results of direct value to the GLAMs as clients and in derivative project applications and awards.

Several of the demonstrators have been realised but prove to be of less use value (for researchers or the professionals) or need more work to be used properly operated, e.g. The Smell Explorer - targeting scholars, perfumers, heritage professionals, artists and the Nefertum as a serious game.

• Objective 5 (policy recommendation): Olfactory Heritage Toolkit (OHT) distils policy recommendations and envisions a roadmap for the area; it has been widely discussed and advertised with different stakeholders, including CH institutions, professionals, and policy makers.
The concrete outcomes in each of these objectives cross and span the different type of stakeholders target by the project, CH institutions, CH professional, academics and researchers, policy makers, industry and the general public.

The recommendations from the previous reporting period have been mostly taken into consideration.

The use of resources is in line with the delivered results and the (minor) deviations for the DoA have been properly motivated.

The quality of the deliverables is generally very good.

At consortium level, the ambition to achieve high level impact at various levels is still high and the potential is huge, although the concrete feasibility of such plan is not entirely convincing. The exploitation plan could be better addressed with more concrete actions for the sustainability of the ODEUROPA assets, intellectual property rights, and commercial exploitation, including CH expertise demand which is reported as growing.
• The consortium has validated the capacity of inter-disciplinary CH research to lead to activities that support the 'Curation of digital assets' by providing open-source tools such as the Odeuropa Images Nosebook – Tracing Visual Smell Trends and Odeuropa Text Nosebook – Textual Smell Trend Analyser.

• The foreseen effect to 'produce economic impact for cultural institutions' has been achieved for those museums and libraries that participated in the project in relation to the project team, e.g. being involved in olfactory events such as guided smell tours in the Museum Ulm, a Malodour workshop in Berlin, and the Amsterdam City Sniffers urban tour, most of which were later transformed into services of the institution that impact their short and medium-term visitor flow.

• The project has presented cultural and historic remains and memories in a comprehensive and attractive, though scientific manner. The open-access Odeuropa data model for olfactory heritage information provides a semantic model for describing smells and their associated experiences. The model is described in the award-winning 2022 paper, Capturing the Semantics of Smell.

• The project team is most proud of having demonstrated that its scientific methods combining know-how and techniques of different domains had led to 'enhancement of European understanding of cultural history'. This is well demonstrated in its tools such as the Smell Explorer which was expected to answer which are the most significant smells and smell-scapes of Europe at the given period and most discussed in historical texts.

• The Scientific impact from use and re-use of digital collection is not clearly measurable as the indicators (although some a digital) have not been rigorously applied in an approach focused on end-users. For the dissemination and exploitation plan, there is no clear schedule for the life after the project that will ensure the produced outputs will be taken up by the target audience

• While economic impact for the fragrance and creative industries is clearly a long-term one, the project has not been active in pursuing this direction. It has well captured a trend of growing demand for both experts who work with odour detection and analysis; or who can research and provide quality assurance for future products and services and for services.

• The focus on policy and working with policy makers and CH stakeholders (e.g. UNESCO, ICCROM, National institutions) is good evidence it has worked to support the promotion of Europe's cultural heritage. For example, the project has achieved important steps in supporting the promotion of Europe's cultural heritage by publishing a policy paper & Olfactory Heritage Toolkit, presenting these to stakeholders and policy makers and having created some synergies but no concrete follow-up actions are foreseen or were presented to ensure future impact.

4. Recommendations concerning the period covered by the report

Not applicable

5. Recommendations concerning future work, if applicable

• R1 Exploitation should be pursued in a more ambitious way. The project results have a really good potential which can go beyond to seeking for follow-up projects (EU or national), leveraging bit and pieces of the outcomes. Rather the consortium is encouraged to look for ways to preserve and to not disperse the unique blend of interdisciplinary ideas, methods, tools, and best practices which the project has managed to pull together. Indeed, as the project team confirmed its interest during the review meeting, it is a timely move to consider a form in which services can be provided to the GLAMs in some format which continue the effect. There are more than one business models to be considered here.

• R2 When it comes to the demonstrators (Images Nosebook and Text Nosebook) and to the Odeuropa ontology/data model, to make them used by CH professionals, they may be transformed into a training module (similar to the one on why/how teach smell (Knowing by Sensing: How to Teach the History of Smell, The American Historical Review 2023) or promoted in more practice-based training services.

• R3 The project is suggested to feed more actively its results and open-source tools back to key players such as Europeana, EuropaNostra and other HORIZONEUROPE projects to secure its legacy.

2. Objectives and workplan

1. Is the progress reported in line with objectives and work plan as specified in the DoA? If there are significant deviations, please comment.	Yes
The objectives of the project have been achieved with considerable success in relation to the DoA. The level of integration of results among work packages is very good and well evidenced with the results in WP2.3.4, including results not only of image but also gesture detection and their analysis incorporated into the EOKG. Some results demonstrating the IH (intangible heritage) value for GLAMs today, include the 'pomander' research both as an 'object' laden with historical meaning in terms of CH but also as a recipe reconstruction that links it to the Encyclopaedia resources. Work Package 1: Project Management has been successfully reported and based on results achieved and the tasks, roles and allocation of resources were monitored well both across the project as well as at participants' level. The project has successfully prepared the action particularly with deliverables on Project Data Management Plan and Progress report Year 1,2, 3. There is good account of coordination approach and management tools as well as justified and approved by the PO change of staff managing WPs. KPIs have been developed and used well to sum up impact. Work package 2: Image processing has achieved the planned objectives, also in respect to deliverables and milestones. Controlled Vocabularies, tools for converting the data. Work package 3: Texts demonstrates very good progress towards the objectives; deliverables and milestones achieved, particularly the D3.5 Odeuropa Text Processing System v3 (Text Mining) into the Odeuropa Data model Work package 4: Semantic Web has achieved good progress towards the objectives; deliverables and milestones achieved. European Olfactory Knowledge Graph (EOKG) D4.3. and experiments D4.4. Work package 5: Storylines has achieved good progress towards the objectives; deliverables and milestones achieved. Specifically, the definition of 'olfactory heritage and 'heritage smell-scapes' informing WP7. Work package 6: Olfactory Heritage Science has achieved good progress towards the objectives; deliverables and milestones achieved, specifically Guidelines on the use of smells in GLAMs, Deliverable D6.1 Work package 7: Impact good progress towards the objectives; deliverables and milestones achieved, Olfactory Storytelling Toolkit (OST, D7.4) and Olfactory Heritage Toolkit (OHT, D7.5) Deliverable D7.10 Dissemination and Exploitation v2 containing an impressive effort which the project has put into communicating and disseminating results, while exploitation is a more modest achievement. Work package 8: Dissemination, Communication, Exploitation very good progress towards the objectives; deliverables and milestones achieved. Key Performance Indicators (KPIs) are impressive in both the quantifiable report as well as the differentiation to exploitation measures, such as consultancy offers and numerous spinoff projects, services, recognitions as indicators of success.	
2. Are the objectives of the project still scientifically and /or technologically relevant?	Yes
The project objectives are still scientifically and technologically relevant, since they are not yet addressed elsewhere in such a complete way.	
3. Are the critical implementation risks and mitigation actions described in the DoA still relevant?	Yes
The critical risks and mitigation actions had been properly validated during the reporting period with corrective measures taken from the previous report to adapt to more realistic measures in view of policy impact and collaboration with the GLAMs sector.	
4. Have the pilots/case studies started to showcase innovative results as described in the DoA?	Yes
Case studies have informed several phases of the project, and they are appropriately conducted together with stakeholders. More in detail: WP 2 developed taxonomies and annotated data, training using data crawling (T-SNE) based on data from the Library Slovenia and Europeana creating an ODOR dataset by subcategories (254). Among its achievements if also a Sniffy Art Dataset (including pose and gesture key points) which produced good results. An example of the results is the success in	

detecting smoke related image objects while the demonstration of detecting image of olfactory gestures is not performing at sufficient level of credibility.

WP3 developed a test analysis annotation scheme based on benchmarks and trained models with a successful MUSTI challenge of several extraction systems in which the most successful was multi-task learning (2.4 mln olfactory events). The testing covered historical data and the last task was based on emotion recognition in multilingual emotion (nostalgia, desire – added by ODEUROPA for 4 languages). Theis is seen as a free to use tool for annotation which with some guidelines could work for other languages. Malodours have been developed as case for intangible Cultural Heritage research too.

WP4 exploring smells developed a methodology based on competency questions (from experts) History and heritage on an existing model used by glam (events). Developed vocabularies in linkage to the world corpora + metadata + extraction Graph DB. Embedding data into algorithms worked better for images than for texts based on framed semantic contexts. (the image referenced by metadata are largely more annotated in the same context) not so for smells which are more unique. The supervised approach proved best for analysing the sets. Validation of the knowledge graph (clustering) led to links predictions which is 80% incorrect without supervision. Adding new collections is not possible in an autonomous way. Consultancy by arts historians (not confuse the data by unrelated domains). Not yet injected back data to Europeana. The current model development is better performing. WP collaborated with Aromalab; computer lab. Icon class categories based on discussion (point to involvement of other experts) which are seen as useful for the Europeana database.

WP5 Storytelling developed smell narratives (existing in historical data – more general) and some from new diaries (focused on specific smells) as well as hackathons (using the smell narrator to build a story for a museum). This led to an open-access journal article based on peer reviewed that is innovative for engaging non-academic researchers (perfumers) in the review. A new project in the Alchemies of Scent – recreation of smells (smells).

5. Have the ethics deliverables due for the current period been adequately addressed and approved?	Not applicable

No ethics deliverable in this reporting period.

6. Have the comments and recommendations from previous project reviews been taken into account?	Partially

Recommendations on the reporting period (the previous reporting period RP1):
• R1: “The deliverables which are asked for improvement require more focused and specific text”: implemented; almost all the deliverables have much more focused text.

• R2: “Add references of EU funding to all communication channels and outputs…”: partially implemented; reference to EU funding is present on the Web site and Twitter/X channel but not on the YouTube channel (which does not link back to the Website).

• R3: “The dissemination plans and the periodic report mention that the ODEUROPA newsletter…”: implemented; all the newsletter issued are available on the Web site.

• R4: “Revision of current communication messages to be sure they are in line with the aims and the scope of the project”: implemented; the communication messages are coherent with the scope of the project.

• R5: “All the deliverables, should report a one page summary table about challenges…”: implemented.

Recommendations on the next reporting period (the current reporting period RP2):
• R1: “The performance of the proposed techniques for image and text processing should be measured, statistically validated…”: partially implemented; statistical validation is not systematically adopted in the deliverables and there is little comparison among the performance of the difference versions (iterations) of the developed tools

• R2: “The consortium is encouraged to continue pursuing and to extend the organisation of shared evaluation tasks for both image and text in order to promote the use of ODEUROPA datasets”: partially implemented; the consortium organized evaluation challenges (the Computer Vision challenge and MUSTI), but there is no comparison between third-party and ODEUROPA’s approaches.

• R3: “The consortium is suggested to explore the possibility of crossing the language and media barriers…”: partially implemented; the EOKG includes both text and images, but the image and text processing tools still work on the two media separately; from the Web site of the MUSTI challenge, and as also discussed during the review meeting, it turns

out that the challenge is about joint text and image processing but there is no explicit description of it in the deliverables. The consortium is suggested to update the final periodic report to give more prominence to these activities.

• R4: “The consortium is suggested to consider to use the story lines…”: implemented; story lines have been used also as a dissemination, engagement and training tool.

• R5: “The historical and linguistic focus of the project should have boundaries and cannot be developed at the expense of the other aims of the project…”: implemented; the EOKG include contextual information and The Heritage Smell Library provides a valuable resource in this respect.

• R6: “Policy and cultural heritage representatives need to be more clearly involved”: implemented; these stakeholders have been involved in relevant events and activities.

• R7: “It is advised to revise all questionnaires and interviews’ questions…”: implemented; the value and impact questionnaires accounted for this.

• R8: The next version of the dissemination and communication plan should report target values for the identified KPI and should also track these KPI in an explicit way…” implemented; these deliverables explicitly reported values for the KPIs and summary tables.

• R9: “The Exploitation plan is still very preliminary…” partially implemented; the updated exploitation plan could have better elaborated the exploitation. See Recommendation R1 for the next period for more details.

• R10: All the listed publications should contain a proper reference to the EU funding”: implemented.

• R11: A review of organisational structure and the approach to teamwork could be beneficial to ensure efficiency and quality of delivery…” implemented.

• R12: “Designate monitoring officer…” implemented.

3. Impact

1. Does the work carried out contribute to the expected impacts detailed in the DoA?	Yes
The activities carried out in the reporting period are all coherent with the expected impacts stated in the DoA and contribute to their achievement. More in detail, the impact is properly documented in all aspects foreseen with detailed KPIs, that are for most parts meeting benchmarks or even exceeding them. Specifically, the impact on a growing research community and respective heritage organisations such as museums is promising	
2. Does the work carried out follow the plan detailed in the DoA to enhance innovation capacity, create new markets opportunities, strengthen competitiveness and growth of companies, address issues related to climate change or the environment, address industrial and/or societal needs at regional level or bring other important benefits for society? Give information on the relevant innovation activities carried out (prototypes, testing activities, standards, clinical trials) and/or new product, service, reference materials, process or method (to be) launched to the market, if any.	Yes
The activities carried out in the reporting period are fully compliant with the plans detailed in the DoA. For the reporting period, the conducted activities substantially enhance existing knowledge in various areas. Moreover, they tackle the largely unexplored area of scent in computer science, CH and GLAMs. Thus, setting the foundation for generating benefits at societal level and to strengthen the competitiveness of the CH sector and creative industries. Specific relevant innovation activities include an innovative peer-reviewed article and training services. The consortium has already trained over 650 GLAM and other cultural heritage professionals.	
3. Does the work carried out contribute towards European policy objectives and strategies and have an impact on policy making?	Yes
Both CH policies and a roadmap for achieving European policy objectives and strategies have been envisioned by the project in the Olfactory Heritage Toolkit (OHT) and policy makers, e.g. UNESCO, ICCROM, National institutions, have been reached out.	
4. Does (or will) the work carried out have an impact on SMEs?	Partially
The work carried out may have an impact on SMEs, e.g. with respect to new professional skills in the curation of exhibitions and by developing new services and technologies on the shared datasets. On the other hand, the way in which the perfume sector handles intellectual property may represent an obstacle to commercial exploitation, also by SMEs. Moreover, there have been SMEs involved in the project, while the key stakeholders of the largest sector impacted which are the heritage sector in the EU. For the most part this is a sector of public-funded institutions which can and will subcontract services related to olfactory heritage curation. In that sense the project is likely to have a lasting impact. Also indirectly, its research output may influence knowledge and even R&D into special new or 'lost' recipes of fragrances and so on.	
5. Have the beneficiaries reached gender balance at all levels of personnel assigned to the action? If not, have the reasons been explained in the periodic report?	Yes
Yes, according to the data reported in the periodic report.	

4. Implementation

1. Has the project been efficiently and effectively managed?	Yes
The project management is effective and efficient, with clearly documented procedure, and a smooth and regular production of deliverables.	
2. Is the management of the project in line with the obligations of beneficiaries (including ethics and security requirements, risk and innovation management if applicable)?	Yes
The project management complies with the obligations of the beneficiaries and the expected documents and tasks have been carried out.	
3. Is the contribution of each beneficiary in line with the work committed in the DoA? (applicable only to multibeneficiary projects)	Yes
Beneficiaries actively contribute to the project activities, as planned in the DoA, as well as to the preparation of the deliverables.	
4. Have the beneficiaries disseminated project results (foreground) in scientific publications as planned in the DoA (including the deposition of publications in open access repositories)? Do they include a reference to EU funding?	Yes
The project beneficiaries have been actively disseminating the project results via scientific publications (also in Open Access repositories), invited talks, teaching activities, and organizing scientific events. The final report indicates 40 scientific publications resulting from the project in the academic domains of computer science, digital humanities, humanities and social sciences, heritage & museum studies and in a mixture of specialised and more general journals and they recognise EU support.	
5. Have the beneficiaries disseminated and communicated project activities and results by other means than scientific publications (social media, press-release, the project web site, video/film, etc) as planned in the DoA? Do they include a reference to EU funding?	Yes
The project beneficiaries have used several channels to disseminate and communicate project results, including a better populated Web site, Tweets, YouTube videos, newsletter, blogs, press releases, and appearance in general media. More in detail: 1) Odeuropa website - core information, news, blogposts, reported at 81k visit sessions and about 148K page views. The project team have aimed to remodel it to a deliverable based model (communicating the Odeuropa milestones and deliverables) however it is not user friendly to the desired extent. 2) Its social media accounts on Twitter / x (1708 followers) 3) Videos produced by the project and for Europeana have gained attention. YouTube have been used to considerable use in the first years. 4) Also using an Odeuropa newsletter had been a useful tool.	
6. Has the plan for the exploitation and dissemination of the results (if required) been updated and implemented as described in the DoA, in particular as regards intellectual property rights? Is it appropriate?	Partially
The dissemination and exploitation plans have been updated. However, as discussed in Recommendation R1 for the next period, the exploitation plan has presented modest ambition. The (shared) intellectual property rights management, possible consultancy services and other options to build on exploitable outputs have been explored without suitable resolution for the moment.	
7. Has the data management plan (DMP) (if required) been updated and implemented? Is it appropriate?	Not applicable
The DMP was not updated in this reporting period. However, the final periodic report includes a minor update to the DMP by creating a community in Zenodo.	
8. Have the proposed institutional changes been appropriately promoted?	Not applicable

5. Resources

1. Were the resources used as described in the DoA and were they necessary to achieve its objectives? If there are deviations from planned budget, have they been satisfactorily explained? Have they been used in a manner consistent with the principle of sound financial management (in particular economy, efficiency and effectiveness)?	Yes
Use of resources is general in line with the plans in the DoA and the minor deviations have been appropriately justified. However, some of the costs defined in subcontracting appear overpriced with respect to the final result produced, particularly, the 21,267 for the Design of Online Encyclopaedia of Smell Heritage employing multi-modal storytelling (T5.5). Further clarifications are needed.	

Annex 1

Expert opinion on deliverables

Deliverable number	Deliverable name	Status	Comments
D1.1	Project website	Accepted	Compliant with its description in the DoA.
D1.2	Project Fact Sheet	Accepted	Compliant with its description in the DoA.
D1.3	Project templates	Accepted	Compliant with its description in the DoA.
D1.4	Data Management Plan	Accepted	Compliant with its description in the DoA.
D1.5	Intermediate Progress report	Accepted	Adequate deliverable. Compliant with its description in the DoA.
D2.1	Taxonomy of Olfactory Phenomena in Images	Accepted	Compliant with its description in the DoA.
D2.2	Annotated image data version 1	Accepted	Very good deliverable. Compliant with its description in the DoA.
D2.3	Object detection/ image analysis	Accepted	Very good deliverable. Compliant with its description in the DoA.
D2.4	Annotated image data version 2	Accepted	Good deliverable. Compliant with its description in the DoA.
D2.5	Computer Vision Challenge	Accepted	Good deliverable. Compliant with its description in the DoA.
D2.6	Demonstrator: image retrieval and visualization	Accepted	Adequate deliverable. Compliant with its description in the DoA.
D3.1	Annotation scheme and multilingual taxonomy	Accepted	Compliant with its description in the DoA.
D3.2	Multilingual historical corpora and annotated benchmarks	Accepted	Compliant with its description in the DoA.
D3.3	Odeuropa text processing system version 1	Accepted	Very good deliverable. Compliant with its description in the DoA.
D3.4	Odeuropa text processing system with historical corpus analysis version 2	Accepted	Very good deliverable. Compliant with its description in the DoA.
D3.5	Final Odeuropa text processing system with emotion analysis version 3	Accepted	Very good deliverable. Compliant with its description in the DoA.
D3.6	Demonstrator: text-based access to olfactory information	Accepted	Good deliverable. Compliant with its description in the DoA.
D4.1	Ontology and vocabularies for olfactory information	Accepted	Compliant with its description in the DoA.
D4.2	European Olfactory Knowledge Graph version 1	Accepted	Compliant with its description in the DoA.
D4.3	European Olfactory Knowledge Graph version 2	Accepted	Good deliverable. Compliant with its description in the DoA.
D4.4	Methods and tools for knowledge graph link prediction and clustering	Accepted	Good deliverable. Compliant with its description in the DoA.

Deliverable number	Deliverable name	Status	Comments
D4.5	Context model for olfactory mentions in texts	Accepted	Good deliverable. Compliant with its description in the DoA.
D4.6	Demonstrators for Olfactory Cultural Heritage	Accepted	Good deliverable. Compliant with its description in the DoA.
D5.1	PastScent Network	Accepted	Compliant with its description in the DoA.
D5.2	Academic conference on olfactory history and digital heritage	Accepted	Appropriate deliverable. Compliant with its description in the DoA.
D5.3	Pilot version of an Online Encyclopaedia of Smell Heritage	Accepted	Good deliverable and useful resource. However, the quality and number of details is not of particularly impressive dimension. Compliant with its description in the DoA.
D6.1	Guidelines on the use of smells in GLAMs	Accepted	Compliant with its description in the DoA.
D6.2	Questionnaires for measuring the value of introducing smells in GLAMs	Accepted	Good deliverable, good set of findings about smells in GLAMs, maybe a bit verbose. Compliant with its description in the DoA.
D6.3	Best practices in olfactory digitisation	Accepted	Adequate deliverable but hard to follow for not experts in olfactory digitisation. Compliant with its description in the DoA.
D7.1	Policy Brief	Accepted	Compliant with its description in the DoA.
D7.2	Impact Activities Report Y1	Accepted	Compliant with its description in the DoA.
D7.3	Impact Activities Report Y2	Accepted	Good deliverable, very good range of activities and more involvement of GLAMs (museums and libraries). Compliant with its description in the DoA.
D7.4	Olfactory Storytelling Toolkit (OST)	Accepted	Good deliverable. Compliant with its description in the DoA.
D7.5	Policy Paper - Olfactory Heritage Toolkit (OHT)	Accepted	Very good deliverable. The list of ToDo items is rather long; it might be better, at least for the beginning, to focus fewer actions which represent the most critical barriers to overcome. Compliant with its description in the DoA.
D7.6	Impact Activities Report Y3	Accepted	Good deliverable. Compliant with its description in the DoA.
D7.7	Communication Plan version 1	Accepted	Compliant with its description in the DoA.
D7.8	Dissemination and Exploitation Plan version 1	Accepted	Compliant with its description in the DoA.
D7.9	Communication Plan version 2	Accepted	Good deliverable and very good range of activities. Compliant with its description in the DoA.
D7.10	Dissemination and Exploitation Plan version 2	Accepted	Adequate deliverable but still not fully outlining an actual exploitation plan. Compliant with its description in the DoA.
D8.1	H - Requirement No. 1	Accepted	Compliant with its description in the DoA.
D8.2	GEN - Requirement No. 3	Accepted	Compliant with its description in the DoA.

Deliverable number	Deliverable name	Status	Comments
D8.3	H - Requirement No. 4	Accepted	Compliant with its description in the DoA.

Annex 2

Expert opinion on milestones

Milestone number	Milestone name	Achieved	Comments
MS1	Odeuropa Essentials	Yes	The milestone has been achieved and the corresponding actions/deliverables have been implemented.
MS2	European Olfactory Knowledge Graph v1	Yes	The milestone has been achieved and the corresponding actions/deliverables have been implemented.
MS3	Olfactory heritage and history state-of-the-art	Yes	The milestone has been achieved and the corresponding actions/deliverables have been implemented.
MS4	European Olfactory Knowledge Graph v2	Yes	The milestone has been achieved and the corresponding actions/deliverables have been implemented.
MS5	Diachronic analysis of olfactory imagery, language, storylines across different cultures	Yes	The milestone has been achieved and the corresponding actions/deliverables have been implemented.
MS6	Communication of sensory storytelling to GLAMs and policy makers, dissemination of results to wider target audiences and made available to scholars for analysis	Yes	The milestone has been achieved and the corresponding actions/deliverables have been implemented.