Executive Summary:
The research conducted in the first and second project period has provided fruitful insights on graffiti ranging from anti-social accounts of graffiti to pro-social effects of graffiti and street art. Within the Graffolution project both perspectives were taken into account from the start. More than 300 pieces of literature and data were examined and analysed and it became clear that duty holders around Europe are under great pressure to find appropriate and cost-effective solutions to tackle the issue. Graffolution has examined and performed a comparative analysis in Austria, Germany, Spain and the UK by desk top research and interviewing more than 80 stakeholders and graffiti writers. Socio-cultural and regional aspects as well as ethical and privacy issues in regard to graffiti in these countries were reported. Comprehensive libraries were established including collection of stakeholders on the one hand, and a list of case studies collected around the world, on the other. A Graffolution typology of the prevention of graffiti vandalism including recommendations for decision-makers were prepared, a generative synthesis of all findings was provided, persona created and a response typology developed. The stakeholder analysis also revealed a great support for the idea of establishing an online platform to discuss and share ideas about the topic from various perspectives.

Based on this comprehensive research the project developed a two-sided web platform consisting of a so called Collaborative Knowledge Base and an Open Information Hub. The Collaborative Knowledge Base enables relevant dutyholders to interact, transfer information and share their knowledge with each other. Through this system, single dutyholders (such as city administrations, transport organisations, law enforcement services etc.) but also other professionals and enthusiasts have the opportunity to identify new approaches tackling graffiti vandalism, share knowledge, find good practices and create their own prevention strategies. Furthermore they can connect with relevant local experts, stakeholders and initiatives in the field of graffiti vandalism prevention to force collaboration activities. Another main element of the Graffolution project was to foster the idea of a better informed community which enforces efficient and sustainable graffiti vandalism prevention solutions. Public awareness should be raised and the website should
pinpoint how illegal graffiti negatively affects a whole community and which legal alternatives are available. Also positive effects of street art (and legal graffiti) have a prominent place on the platform to indicate that graffiti also has inter alia the potential to improve areas. To achieve this goal a so called Open Information Hub was established which informs all kinds of stakeholders and let them participate on the platform to share perspectives and opinions. Furthermore the community can contribute to the platform in suggesting new pieces of information (e.g. new legal walls, events).

To ensure the platform was created according the identified needs and requirements, end users were integrated during several stages of the design and development process. In addition workshops and a Graffolution event were performed to present the platform to a wider audience and get further feedback for adjustments. To reach a wider public different kinds of materials were created including quick start guides, instruction videos, event videos, factsheets and flyers. The project and outcomes were further disseminated via various channels and activities including: project website, Graffolution platform, newsletters, social networks, blogs, scientific publications, workshops and meetings, conference attendance, engagement with policy makers, media communications and flyers. Besides the very positive feedback at the events and the growing number of users of the platform the success of the project is also shown as during the project duration several collaborations with other organisations and further activities were initiated which will continue after the end of the project such as the Open Galleries Pilots which connects the Graffolution web-platform with offline actions fostering street art and thereby contributes to reduce illegal graffiti.

Project Context and Objectives:
European city administrators, public transport services, law enforcement agencies and other stakeholders spend enormous amounts of money attempting to tackle graffiti vandalism. Effective and more holistic approaches to fighting illegal graffiti are needed, including a community resource to help understand vandalism problems whilst at the same time sharing and innovating new ideas and responses. Graffolution seeks to decrease graffiti vandalism in public areas and transportation networks by providing information on smart awareness and available prevention solutions for all affected stakeholder groups, including those who manage graffiti, as well as those who have utilised street art as part of city regeneration, place making or community involvement strategies.

Graffolution delivers an extensive set of “Collaborative Tools and Resources” that include a space for dutyholders, with case studies and other methods of evidencing successful practice, to empower city administrations, public transport services and law enforcement agencies to share knowledge and more widely promote best practices. Additionally, Graffolution develops an interactive “Open Information Hub” addressing local communities, citizens and graffiti writers to strengthen public awareness and enforce the prevention of illegal spraying activities, using effective tools and visualisations. Graffolution main objectives can be summarized as follows:

1. Conduct research on graffiti vandalism in public areas and transport, and identify relevant stakeholders, roles and processes.
A fundamental objective of the project is to conduct an in depth research on the current state of graffiti vandalism in public areas and transport in Europe. Therefore all relevant stakeholders, roles and processes have to be identified. The explored data should give a clearer picture on the graffiti vandalism situation for stakeholders such as cities, public transport services and law enforcement agencies are facing.

2. Analyse initiatives, measures, technical methods and best practices in response to graffiti vandalism in Europe and survey requirements of all affected stakeholders.
A main focus of the Graffolution project is the analysis of the range of initiatives, measures and methods aiming at the reduction and prevention of illegal spraying activities that damage public and private property. The requirements of all affected stakeholders have to be surveyed in detail to enhance all project outputs according their needs.

3. Develop concepts and solutions against illegal graffiti and design a web-based awareness and prevention framework for stakeholders and public.
Based on a comprehensive research on graffiti vandalism and its prevention, concepts and solutions meeting the stakeholder requirements will be created. These elaborations of practical solutions and technical concepts build a strong foundation for the web-based platform.

4. Develop a Collaborative Knowledge Base for experts and affected stakeholders to improve the exchange of know-how and support decision makers at European level.
Graffolution will maintain a Collaborative Knowledge Base that enables relevant stakeholders and local experts to interact, transfer information and share their knowledge with each other.
5. Provide an Open Information Hub adopting social media technologies to increase awareness among writers and citizens by presenting information and visualisations. The project seeks to raise public awareness and pinpoint how illegal graffiti negatively affects a whole community and which legal alternatives are available to support pro-social activities. To achieve this goal an Open Information Hub is being established which uses social media technologies to maximize understanding and opportunities among all stakeholder, including graffiti writers.

Project Results:
The following section provides an overview on main results that were achieved in the research, development and demonstration work packages. More information including images and screenshots can be found in D1.3 Final Project Documentation.

WORK PACKAGE 2: VANDALISM RESEARCH, STAKEHOLDERS ANALYSIS AND SOLUTION ELABORATION

WP 2 created the scientific fundament of the project and produced essential knowledge for the development of efficient solutions, measures, guidelines as well as basic input for the Graffolution web platform.

An extensive literature research on graffiti and graffiti vandalism led to the most comprehensive literature bibliography on the topic to date (over 300 references), including information on graffiti management as well as academic and business related information. The literature review revealed that the most appropriate responses to graffiti management now need resources that assist and reach beyond the crime lens (D2.1). In addition, the sources reviewed revealed both (i) evidence and methods for tackling graffiti as vandalism or ‘anti-social’ activity to be reduced or prevented, but also (ii) rationale approaches to graffiti through a socially constructive lens, linked to promotion of ‘pro-social’ responses.

Two more important resources for all those professionally involved in graffiti – either in regard to graffiti prevention or for graffiti support – were developed within the Graffolution project (D2.3): (i) a collection of stakeholders involved in the field in Europe and beyond that give a structured overview about the different key actors including those from police and law enforcement, local and state authorities, transport operators, graffiti writers, social and cultural projects, manufacturers, alliances and initiatives. Another important list produced within Graffolution include various (ii) case studies, in fact more than 115 documented case studies were systematically collected and analysed and the most relevant ones are provided by the Graffolution online platform which can be used by interested parties for further surveying experiences, challenges and requirements of various actor groups.

Another collection performed within the project included prevention strategies (D2.5) which were collected, analysed and classified with the aim to understand the range of available strategies and to depict trends in Europe and beyond. The underlying assumption was that there are two perspectives to consider: anti-social approaches vs. pro-social approaches. However, the detailed analysis of the collected prevention strategies revealed a typology beyond the two-fold perspective: whereas anti-social prevention strategies are similar in all examined countries, pro-social approaches can be further distinguished into (i) more graffiti restrictive approaches, where the focus is lying on street art and interactive artistic events in order to avoid graffiti offences, particularly tagging; from (ii) more graffiti supportive strategies that allow not just street art, but various kinds of graffiti, including pieces, but still no tagging.

Central to the Graffolution project were a qualitative study conducted in four partner countries (Austria, Germany, Spain and the United Kingdom) (D2.2 D2.3 D2.4 D2.5. D2.6 D2.8) and followed by surveys that addressed all European Member States to broaden the scope, to gather additional insights and to validate the findings acquired in the four in-depth analysed countries (D2.7 2.9.). At the centre of research were in-depth interviews with stakeholders from six fields of police and law enforcement, social and cultural projects, enterprises, transport organisations, graffiti writers and public administration/authorities. In total 85 interviews were conducted, transcribed and analysed; minimum requirements were 20 interviews per country. The interview guidelines, commonly agreed within the consortium, included regional, cultural, ethical, privacy and legal aspects of graffiti as well as stakeholder experiences, challenges and requirements. The consortium has chosen an innovative symmetrical methodological approach which means that the same questions were addressed to the different stakeholders group – a challenging as well as generative approach. The underlying idea behind this was already formulated at the kick-off meeting of the project: to be open minded towards all the various positions and perspectives in the field of graffiti in order to ensure a maximum of neutrality in a discussion often characterised by multiple heterogeneous and polarising points of view. To adhere the equality of all involved parties was done consequently during every step of the project, despite the fact that this approach received reservation by some stakeholders, though the majority was fine with it.

Major findings of the research include for the four countries study:

1. Regional aspects:
   • Graffiti is predominantly an urban phenomenon in all examined countries.
2. Ethical and privacy aspects:
   - A distinction between art and vandalism (street art vs. tagging) are made
   - Painting with and without permission, particularly legal walls, which are currently not yet well developed in Spain compared to the three other countries
   - Surveillance technologies implemented to prevent graffiti vandalism are often not consistent with the right of privacy

3. Legal aspects:
   - Graffiti prevention is built upon the basis that graffiti is associated with vandalism and anti-social behaviour. However, it depends on the context, the stakeholder and the situation if graffiti is considered illegal or causes harm/benefit. The key question to be considered here is the permission of the owner.
   - Graffiti is not an own crime in the national criminal codes of the examined countries, but subsumed under incivility, anti-social behaviour (ASB) and/or criminal damage.

4. Graffiti vandalism monitoring, reporting and management tools evaluation aspects:
   - Only a little part of the techniques analysed are specifically designed to monitor, report or manage graffiti vandalism but were implemented for other reasons.
   - Most of the systems are reactive: they are implemented mainly to detect and stop graffiti vandalism. None of the techniques analyzed are addressed specifically to graffiti writers. Indeed, the monitoring and managing systems are mainly designed for the use of public authorities and police, while the reporting techniques are focused on citizens and civil society.
   - There is great lack of evaluation of monitoring, reporting and management tools.

Major findings acquired in the four examined countries, but validated by extending the scope towards other European countries via the method of an e-consultation (D2.7) include:
   - Graffiti is considered to be a persistent social phenomenon. This fact requires improvements in dealing with this phenomenon, in particular as zero-strategies are too expensive.
   - Better communication and networking between the different stakeholders are necessary.

An so called affectedness scheme, produced after analysing the interviews and helping to structure and illustrate the otherwise very heterogeneous stakeholder groups, could be confirmed through the European-wide e-consultation
   - Especially pro-social strategies play an increasing role, here the importance of restorative justice approaches has been emphasized.
   - The categorization scheme of stakeholders, developed at the first stage of research could be also verified, although e-consultation clearly indicated that private proprietors as one of the aggrieved parties are clearly missing. This gap should be addressed in future research.

Major findings: Synthesis of key proposals, recommendations and concepts
   - Effective awareness and prevention concepts was extended towards the restorative and regenerative actions related to graffiti.
   - Discovery of relevant awareness, prevention and facilitation insights of WP2 led to development of a ‘Graffolution Response Typology’ that include: environment / infrastructure, enforcement – prevention, enforcement – activity support, education / empathy, collaboration, culture, and economy (response types were correlated with the 5Is framework: intelligence, intervention, involvement, implementation, impact).
   - Definition of Graffolution research-informed set of ‘Personas’, including key characteristics relating to risks/efforts/rewards/agency and motivations.
   - Development of visualisations of journey / touchpoints to map opportunities for the development of effective solutions and awareness measures for the platform.
   - Delivery of report including concepts for diagnostics and tool-based approaches, helpful for identifying appropriate responses through the Graffolution platform.

Future tools against graffiti vandalism
Proposals for and descriptions of, conceptual and technical innovations in reporting, monitoring and management tools, identified through the Graffolution project were presented (D2.9). These include ten feasible and immediate future response proposals and tool
functions, anticipated to be particularly fruitful:

1. Citizens being more involved in decision-making - e.g. remove or approve feedback, open feedback rating systems.
2. Community-led collaborations for place-making – promoting peer to peer collaborations such as citizens collaborating in place-making activities
3. Expert Panels / Advisors - involving nominated experts representing all actor groups, from authorities, to academics, community action, cultural facilitators, graffitiists, street artists and more.
4. Authorised, Commissioned and Competition Spaces - specific to respective public areas and transport contexts
5. Artist Quarters and Residencies - to enable extra capable guardianship through creative practitioners
6. Wider multi-agenda feedback features - within existing and new graffiti and environment assessment tools/resources.
7. Online graffiti archive & visual data aggregator - sharing visual and social changes around specific walls.
8. Shared categorisation, indicators and data formats – promoting transparency in communicating costs and spending on managing and reporting graffiti.
9. Public discussions on rights for public space (social awareness) – to open out discussions at (a) policy/management, (b) citizen, (c) academic and industry levels.
10. Restorative Justice (RJ) response actions – to permit new context specific responses in relation to graffiti offences, for example via community remedies.

Graffolution research compendium
As the research process of WP2 produced a high number of central findings and insights based on different methodological steps all these aspects and findings were summarized in the compendium along the central topics (D2.10): (i) the different methods applied, (ii) findings regarding the graffiti phenomenon; (iii) the graffiti relevant stakeholders; (iv) strategies and measures.

The experiences made during research process point to some important development aspects for future research in the field of graffiti:

- The need for an enhanced provision of statistical data and valid information around graffiti as there is an enormous lack of reliable data, about how graffiti exactly developed in the past but also about the present situation. Especially a standardised European wide procedure of collecting data about graffiti incidents would be desirable and a great facilitation of graffiti research – although probably only hard to realise.
- The need of an enhanced evaluation of conducted projects and applied measures. This would allow a detailed impact and process analysis of the different action strategies regarding graffiti and therefore be a big advantage for the further development of such strategies.
- The phenomenon graffiti itself holds some aspects that could be the focus of future research, and here the probably most important and also most controversial question about the impact of graffiti on, and its consequences for the public sphere. Hereby, a detailed analysis of all kinds of involved variables would be interesting. These include for example the density of illegal graffiti within an area, the complexity and artistic quality of the graffiti and the coincidence with other factors that generate a feeling of insecurity, like public drinking, hanging out youths and general signs for dilapidation. The analysis of these and other variables would be useful to give detailed information about when and in which contexts, graffiti can have a positive or negative impact on the public sphere and especially the quality of living for the surrounding environment.

Major finding relevant for the development of the Graffolution online platform
The research identified three central fields of requirements and benefits of the Graffolution platform (D2.4 & D2.7): Interacting with other graffiti relevant stakeholders; Learning about the dealing with the phenomenon graffiti; sharing of latest Information on graffiti relevant topics.

WORK PACKAGE 3: GRAFFOLUTION WEB PLATFORM CONCEPT, DESIGN AND PROGRAMMING
Within WP3 the transition from research insights of WP2 into a functional concept for a web platform and the following software development took place. This includes the conception and setup of the underlying technical framework, functionality descriptions, mockups, programming of components as well as the development of usable interfaces and tools that are adapted to stakeholders needs.

Main concept:
A key task in WP3 was the elaboration of a comprehensive concept for a web–based awareness and prevention platform which builds the core element of the Graffolution project. Main requirements to the concept were its scalability, flexibility and its low cost basis to
save precious resources. The platform should gather and structure relevant knowledge and contribute to a stronger and more effective communication between stakeholders. The Graffolution platform consist of particular modules that aim at the requirements of dutyholders and further stakeholders.

The conceptualisation of the Graffolution platform focused mainly on following two objectives:

1. Develop a Collaborative Knowledge Base for local experts and affected stakeholders to improve the exchange of know-how and support decision makers at European level

Graffolution should hold a so called Collaborative Knowledge Base that enables relevant dutyholders to interact, transfer information and share their knowledge with each other. Through this system, single dutyholders (such as city administrations, transport organisations, law enforcement services etc.) but also other professionals and enthusiasts can learn more about existing prevention approaches to tackle graffiti vandalism. This objective covers following aspects:
   - Collect graffiti prevention methods which are currently performed by dutyholders to identify and inform about positive or negative effects. Users will be able to learn from each other while new measures are still running.
   - Gather best-practices that proved that they produce positive effects and are able to avoid or reduce illegal graffiti.
   - Provide a system for stakeholders to setup or adjust a comprehensive graffiti prevention strategy for their area of responsibility.
   - Enable stakeholders to detect positive or negative consequences of their graffiti prevention measures through a shared access to reliable quantitative data on graffiti vandalism.
   - Connect relevant local experts, stakeholders and initiatives in the field of graffiti vandalism prevention to force collaboration activities and a joint course of action in tackling illegal graffiti.

2. Provide an Open Information Hub adopting social media technologies to increase awareness among sprayers and citizens by actual information and visualisations.

A main element of the Graffolution project was to foster a well-informed community which enforces efficient and sustainable graffiti vandalism prevention solutions. The website should pinpoint how illegal graffiti negatively affects a whole community and which legal alternatives are available. However, also positive effects of street art (and legal graffiti) will have a prominent place on the platform to indicate that graffiti also has inter alia the potential to improve areas. To achieve this goal a so called Open Information Hub was established which informs all kinds of stakeholders and uses social media technologies to maximize the awareness among graffiti writers and citizens. Following aspects were covered by this objective:
   - Presentation of societal impacts on the community caused by graffiti. This includes positive effects such as murals that improve areas as well as negative effects that are caused by illegal graffiti vandalism including costs for removal, prevention and prosecution.
   - Raise awareness on individual consequences for graffiti writers and victims. This includes information about legal issues, health issues but also positive personal effects of legal graffiti writing such as artistic expression.
   - Provide information that offers all graffiti writers legal alternatives to exhibit their skills to a broad audience.
   - Contribute to a more consistent reporting of graffiti vandalism through affected citizens to draw a more detailed picture of the current extent of graffiti vandalism for relevant stakeholders.
   - Integrate social media elements to reach especially young graffiti writers and raise their awareness for negative effects of illegal spraying activities to their own lives and to the whole community

As the Graffolution platform seeks to support different kinds of stakeholders it was split in two main parts. The Open Information Hub aims for a broad range of stakeholders including graffiti writers and all interested parties in graffiti art as well as victims of graffiti vandalism. This platform side has a focus on reliable information on the graffiti topic including positive and negative impacts that are caused by graffiti. The other side, the Collaborative Knowledge Base, aims especially at so called dutyholders that deal with graffiti vandalism mainly on a professional basis. This side will support them with comprehensive information and features that can be ideally used in their vocational context. The separation in two sides is necessary as the Graffolution platform also invites users to share content that might be of relevance for other stakeholders. To allow such functionalities it is relevant to include a registration process which allows the administrators to control the provided content and prevent misuse of the system. However, this does not mean that particular groups or users are excluded from the Collaborative Knowledge Base, as all interested users can sign up to this part of the platform.

Module descriptions:

The Graffolution platform is conceptualised in a modular way which can be iterated and can become highly adaptable to the dutyholder/stakeholder requirements. The modules present the main capabilities of the platform. Based on the insights made throughout the project duration the modules were readjusted and enriched with further features throughout the development and demonstration process. The initial module descriptions were formed based on use cases derived from the first interview insights made
Usability design and early mockups:
After the first module descriptions were established several interface design types were created. This allowed the consortium to get a better understanding how the fundament of the platform can look like and how users may interact with it. Based on the considerations and initial decisions on the interface detailed mockups of the Graffolution platform were created. This process was very important as it combined all initial insights and ideas in a visual concept. Such a concept allowed the consortium to constantly add more and more details and functionalities without losing track of the overall goals of the project. In addition the mockups work as blueprints for the developers and ensured that the provided ideas were transformed into a full functional platform. However, the initial mockups were only a main suggestion for the look and feel of the platform. The chosen User Centered Design (UCD) approach allowed the designers and developers to quickly make adaptations and improvements during the implementation and testing phases of the project.

Platform framework and development environment:
Graffolution was designed as a flexible web platform which is built on a stable architecture through the use of the content management system Joomla as a basic foundation.

The development environment of the web platform consists of following technologies:

HTTP server: Apache 2.4.9 / Apache 2.0 License
Programming Language: PHP 5.5.12 / PHP License v3.01
Database: MySQL 5.6.17 / MySQL Community Edition
PHP CMS: Joomla 3.3 / GNU Free Documentation License (GFDL)
HTML, CSS & JS Framework: Bootstrap 2.0.2 / MIT License
JavaScript Library: jQuery 1.11.1 / MIT License
JavaScript Library: jQuery UI 1.11.3 / MIT License
JavaScript Library: Plupload 2.1.2 / GPLv2
JavaScript Library: Pikachoose 96 / Open Source
Web Service: Google Maps API 3 / OEM
Operating System: Linux CentOS 7 / CREATIVE COMMON ATTRIBUTION 3.0 UNPORTED LICENSE
Browser Extension: Firebug 2.0.8 / BSD License
HTML, CSS & JS Framework: Bootstrap 3.2.0 / MIT License
JavaScript Library: Media Boxes Responsive jQuery Grid 1.0.0 / Regular License
JavaScript Library: Social Share 1.0.0 / MIT License
JavaScript Library: Validate.js 0.7.1 / MIT License
JavaScript Library: Underscore.js 1.8.2 / MIT License
PHP Github Package: J7mbo/twitter-api-php 1.0.0 / MIT License
PHP Github Package: madcoda/php-youtube-api 1.0.0 / MIT License
PHP Github Package: cosenary/Instagram-PHP-API 1.0.0 / MIT License
PHP Github Package: 256cats/flickrphp 1.0.0 / MIT License

API:
The API or Application Programming Interface is the most important part of each application. In the case of Graffolution it also represents the place where all the project business logic is stored. API class is located in the root folder of the project in the "administrator/components/com_graffolution/api/api.php" file. This API class is used everywhere in the project. It contains more than a hundred small methods that build the entire website functionality and a couple of constants which are used a lot of times when calling the API.

Reasons for using the API
Usually the Business Logic is kept in models, but during the development of the Graffolution project we have found a better way of structuring things by moving all the functionality to the API class. The models are thin and very clean with few API calls. By moving methods from the model to the API we have created a place where we store the entire functionality and we do not need to load particular models every time a request is made to the application, instead we are loading just one file, the API class which does everything we might want. Having the API class as central point of application helps creating a more decoupled structure. Keeping the functionality in models makes the application to be framework dependent, which is not really a great idea, especially if in the future the project might grow and there is a desire to move the project to some other framework.
Backend development:
Joomla has a great backend providing a lot of administration functionality for every site owner. The development process on the backend follows the same steps as on the frontend. Due to the MVC pattern it is ideal for developers to write components for Joomla which can handle both the frontend and administration part. The main component of the website is the “Graffolution” component. More than 90 percent of the functionality resides in here. The interface is very good structured with a few widgets in the middle which are displaying the logged in users, the popular articles and the articles added recently. The backend development was described in detail in D3.4 and D3.5 for more information on the development please refer to these deliverables.

Frontend development:
The frontend development was documented in Deliverable D3.4 and D3.5. Each of the created modules was described in detail including screenshots, code snippets and database connections.

Platform views, description and content integration:
In order to provide a detailed description of which knowledge and data sources have been integrated and how they have been allocated to the different modules of the platform, in the following each platform parts are briefly described.

Collaborative Knowledge Base
Because of the professional profile of the user groups targeted by this area of the platform (such as Public Administrations, Police and Law Enforcement, Transport Operators, Social Work & Civil Society, and Enterprises) and the fact that registration is required in order to access it, more specific content, compared to the one available in the Open Information Hub, can and should be integrated here in order to inform professionals and dutyholders about all currently existing opportunities in graffiti vandalism prevention. Given the goals defined for the Collaborative Knowledge Base and the content available from the previous work packages of the project, five main modules have been identified:

1. A Collaboration Navigator gathering organisations of relevance in the field.
2. A Response & Case Library gathering the knowledge and information of Deliverables D2.3. (“Stakeholders, initiatives, alliances and case study library”) and D2.5. (“Prevention strategies report and approach evaluation summary”).
3. A Data Collector system which provides a structured way for organisations to save their own data on graffiti vandalism and prevention and contribute to making it more measurable and comparable.
4. A Resource Pool, where all deliverables from WP2, some from WP5, academic publications from the partners, and further sources of information used or found during the project are uploaded.
5. A Tool Box, which combines the previous knowledge in a way that is practical for decision making.

Home
The Home page gives an overview of these five areas and shows the last organisations that have registered on the Collaborative Knowledge Base.

Collaboration Navigator
The main goal of the Collaboration Navigator is “to support users form the Collaborative Knowledge Base to get an overview on relevant local, national and pan-European organizations, experts, initiatives, alliances and task forces in the field of graffiti vandalism prevention” (D.3.2: 56). Thus, the information included in this section should help organisations to find potential partners to collaborate. Given the goal of the Collaboration Navigator and the fact that the information will be filled by members of organizations themselves, and considering that this will be their initial contact with the Collaborative Knowledge Base of the Graffolution platform, it is advisable that the required fields are kept as simple, manageable and purpose-oriented as possible in a way that is not too burdensome for the user completing the profile. Therefore, the minimum fields that are required from the organisations are: name, type of organization, country, address, contact (phone and email address), short description, logo and/or images, social media channels (website/Twitter/Facebook). However, organisations also have the chance to share further information like, for instance, cases, materials, and their collaboration preferences (local/national/international). This information will allow other users to filter the organisations’ list by country, organization type, and collaborative preferences or by simply introducing a keyword. It will also allow a practical visualization of the organizations’ location throughout Europe through the Map View.

Response & Case Library - Response Actions
Response Actions are classified according to the Key Steps (Intelligence, Intervention, Implementation, Involvement and Impact) and
Response Types (Collaboration, Culture, Economy, Education and Empathy, Enforcement - Activity Support, Enforcement - Prevention, Environment & Infrastructure, Evaluation) they comprise. In order to understand and assess the knowledge on response actions, Key Steps are created based on 5I knowledge framework developed by Paul Ekblom. It is originally initiated for crime prevention activities however here we extend the scope across response actions addressing anti-social as well as pro-social challenges related to graffiti and graffiti vandalism. 5Is comprises key steps in the process of prevention activities describing what is done at each stage:

- **Step 1: Intelligence (Why?)** is about gaining the knowledge we need to guide decisions and actions
- **Step 2: Intervention (What?)** is about response actions that are related to mitigating anti-social challenges and promoting pro-social actions
- **Step 3: Implementation (How?)** is about undertaking a range of practical and administrative tasks, including setting up infrastructure, obtaining and using resources to deliver a specific intervention.
- **Step 4: Involvement (Who?)** is about who we involve in undertaking the practical actions and which organisations/group of people are needed to implement the interventions, to contribute intelligence and/or to evaluate the impacts.
- **Step 5: Impact (What Change?)** is about evaluating whether the action was worthwhile.

All response actions are categorized according to their response types. The response types describe what kinds of activities are undertaken and what drives these activities.

- **Environment**: Response actions reflecting for, or have direct impact upon environment and infrastructure including public and transport spaces
- **Enforcement - Prevention**: Responses related to the prevention of graffiti activities such as targeted enforcement, rapid removal, observational vehicles, anti-graffiti coatings as well as reparative, rehabilitative and punitive actions.
- **Enforcement - Activity Support**: Enforcement response actions indirectly support legitimate activity. These include street art/-graffiti events and festivals, place-making events as well as cleaning activities and community services.
- **Education and Empathy**: Response actions that foster a sense of social responsibility, safety, the practice of arts and its management. Such as educational media campaigns, youth programmes and street art/graffiti classes.
- **Collaboration**: Collaborative response actions can be broadly split into three groups: peer-peer responses (e.g. self-initiated programmes), organisation-to-peer responses (e.g. mural projects, cleaning groups), and peer-and-organisation responses who mutually collaborate in a more horizontal capacity (e.g. arts-led regeneration activities).
- **Economy**: Response actions that principally organised around achieving improved budget efficiencies or commercial opportunities.
- **Culture**: Responses driven by cultural opportunity, including outdoor exhibitions, film, engagement programmes, publication, photography, archiving, storytelling, and more.
- **Evaluation**: Response actions that focus on assessing problems; processes or outcomes. Some of the examples are graffiti pattern or type analysis, complaints comparisons, social media counts.

A secondary variable that has been considered in order to classify them is the Touchpoint(s) that appear in the action, which can be helpful when seeking to identify response opportunities. All response actions have ratings that will be given by the organizations and each rating reflects the perspectives of users from different groups on whether they consider a given response action useful, relevant or inspirational. These ratings are a key part of Graffolution's diverse and open discussion on matters of graffiti and graffiti vandalism.

Response & Case Library - Case Studies

All case studies gathered in the Case Study Library (D2.3.) that provide sufficient information according to the 5is framework are consequently integrated in this section of the platform. Each case study is related not only to the response action(s) that have been used but also to the target groups involved and the impacts achieved.

Beyond the cases gathered in D2.3 further case studies have been integrated. Such as:

- Shared art projects where street artists create murals (e.g. "Urban Area open spaces – Salerno" project in Italy) or they invite local artists to create an open gallery in their cities (e.g. Mechelen Street Art Project from Belgium, Open Gallery Fanzara from Spain).
- Case studies where street art has used as a tool for revitalisation of a neighbourhood or public areas (e.g. OGARNA 2.0 project from Poland, Anděl Metro Street Art Makeover from the Czech Republic).
- Case studies on Restorative justice (e.g. Crime Concern UK were commissioned by Sanctuary Housing to undertake restorative justice between a young resident and other members of the community).
- Case studies that have started with an artist's initiative but later on become a community project (e.g. Before I Die from the United States, Career Path from Finland).

Moreover, the organisations that join the Collaborative Knowledge Base in the future will also be able to upload their own case studies. For each case, the contact information of the organisation will be available so that interested users can establish a direct contact and
learn more about the case. Therefore, the minimum information that will be required in order for organisations to include a case study in the platform will be: the case title, main description and contact information.

Data Collector
The main purpose of the Data Collector tool is to "allow to quickly gathering basic data (e.g. costs caused by illegal graffiti), analyse it and visualise the data" (D.3.2: 62). At first, the list of organisations mentioned in the Collaboration Navigator module will also be encouraged to introduce their data in this module. In order to be properly analysed, visualised and compared, data should be gathered in a structured way which works for many different kinds of stakeholders. Although this might be quite challenging, the consortium has found a suitable way to achieve this goal. Data Collector allows organisations to store and monitor their own data regarding their Personnel Hours, Costs, Number of Activities and Number of Incidents related to graffiti and graffiti vandalism. Each organisation will be able to enter the data that is relevant for them. For example, the transport agencies will be able to record their service interruption data, as well as the organisations that have Hotlines for complaints about graffiti. The visualization of the recorded data will help organisations to better analyse and monitor their own data. For example, they will be able to see the historical evolution of graffiti incidents, which are the most usual targets (stations, trains...) the historical evolution of the costs that graffiti represents for them and the break-down of these costs in different activities such as cleaning/repairing or pro-social projects. Based on the categorized information it is possible to compare the data between different organization types and participating countries. The data will also help to evaluate the used methods whether they were worthwhile or not. Based on the inputs from Ferrocarrils de la Generalitat de Catalunya, which gave a good idea of which information is important and realistic to collect, a system was set up which allows each type of organisation to only include the information which is relevant for them. With this module, Graffolution aims at promoting proper gathering and analysis practices of graffiti related data among dutyholders in order to improve policy evaluation and design, a need that has been highlighted throughout the project. The exercise of filling out the information, rewarded by the possibilities that the tool offers (better analysis and comparability), is aimed at encouraging organisations to regularly collect and update their data as well as to improve the quality of this data, for instance, by separating graffiti incidents from general vandalism, adding incidents’ locations, distinguishing between vandalism and pro-social projects.

Resource Pool
All public deliverables from Work Package 2 will be available as resources in this module of the platform. In order to produce such deliverables, the project consortium has gathered extensively available data, statistics, research reports and literature about the topic which have been gathered in Zotero during the course of the project. The links to these sources will be made available in order to facilitate the work of organisations willing to learn about different approaches to the topic. Some deliverables form Work Package 5, such as the newsletters, factsheets and policy briefs, as well as the academic publications produced by the partners within the framework of the dissemination activities, are also available in this module. Beyond the initial inputs provided directly by the consortium, the aim of this module is to allow and encourage organisations to keep sharing their own resources (in any language they want) between them. With this in mind, registered organisations will have the option to share their own resources and access the resources uploaded by others, filtering by language and with the help of tags and the "Search" option.

Tool Box - Response Opportunities
Here, users can find a timeline that helps them relate each possible intervention point within the ‘graffiti journey’ with the Response Actions that can be most effective at each stage. This module allows the user to better understand which approaches might be helpful with regards to its own context and specific problems related to graffiti vandalism.

Tool Box - Strategy
This tool helps users to develop a strategy and plan the whole cycle: from problem definition to evaluation and impact assessment. The elements that are available in this tool can be for one-time or long term interventions, single or complex actions, as well as for approaches departing from prevention, response or recovery nature. This section is designed to help users to document a strategy specific for their aims to fully achieve them.

Tool Box - Evaluation
The goal of this module is to raise awareness among policy makers about the general lack of long term and continuous evaluation and to give ideas which types of evaluation are available. On top of that, a "Tool box for evaluation tools and indicators" is integrated in order to help decision makers to better evaluate the consequences of their response strategies.

Open Information Hub
Home
The start page of the Open Information Hub is the first contact of any user with the Graffolution platform and thus, it shall display at
the same time positive and negative effects of graffiti and convey an impartial approach to the phenomenon. The start page also
provides a quick overview of the options available in the platform and contains dynamic sections that hold steadily updated content,
which shall point out that it is a living platform and therefore interesting to visit over and over again.

Discover - Did you know?
Deliverables 2.1 and 2.2 contain relevant information regarding styles, types, categories, vocabulary, and knowledge on offenders and
victims. These deliverables are published in the Resources section and, on top of that, in order to increase the visibility and make the
most of the research results, this information was adapted into short articles and shared in this section of the platform. Other articles
informed by Work Package 2, desk research and additional sources identified during the interviews have already been integrated into
this section. These are, for example, articles about graffiti writers' profile and gender, documentation of street art, complaints about
graffiti.

Discover - Perspectives
In this section main messages are displayed that different stakeholder groups are willing to share with others. This should contribute to
solving one of the main problems identified throughout the project, the lack of communication between them, by representing all kinds
of perspectives about the phenomenon. Perspectives from various stakeholder groups are presented in this section, pointing out issues
such as the role of mediator stakeholders, the importance of communication, the risks associated to graffiti vandalism, and the
rethinking of traditional strategies. This section is also aimed to become a live and interactive space for respectful discussion and
debate. Therefore, it includes a "Discussion" feature, in which users are able to participate via Twitter. On top of the Discussion feature,
the users of the platform will be invited to give their own perspectives by selecting the option "Add your perspective".

Discover - Impacts
This section will be informed by Work Package 2, desk research and additional sources identified during the interviews. Just as in the
"Did you know?" section, short articles will adapt the content of some of the sections in Deliverable 2.2 in order to present the
information in a more attractive way (e.g. individual impacts, social impacts, ethics of graffiti prevention).

Discover - Resources
The full version of Deliverables D2.1 D2.2. and D2.10 which have a public level of dissemination, are available in this section of the
Open Information Hub for anyone to access and consult. Deliverables from Work Package 5, such as newsletters, factsheets, and policy
briefs, as well as the academic publications written by the partners, are uploaded in this section. Besides this information further
materials found during research is provided in this section for the public.

European Walls - Free Walls
This module contains information about free wall projects all over Europe. Those who have been integrated so far, were identified by
the consortium during the research phase. The consortium encourages especially trustworthy organisations which manage free walls
to share their content through this section of the platform and provide a link to their own website for further information.

European Walls - Open Galleries
In addition to Free Walls, an Open Galleries section has been included to promote this new idea since evidence proves that it can also
be an interesting opportunity for cities and the consortium would like to bring it to the attention of all related stakeholders. Open
Galleries focus on creative practice, regenerative environmental strategy, and cultural engagement. They provide allocated space for
street artists who would like to display their works.

Respond - Response Finder
This section includes the information integrated by Graffolution partners in the "Response Actions" section, and those response actions
uploaded by Collaborative Knowledge Base registered users. It serves also as crucial point on the platform to invite professional
stakeholders to the Collaborative Knowledge Base which provides further features and more information that is relevant mainly for
dutyholders.

Respond - Report Navigator
This section gathers a list of organisations' websites where users affected by graffiti vandalism can report incidents. The report
navigator will also rely on user generated content by giving users the option to further suggest relevant institutions.
Respond - Projects
This section gives the public a brief overlook on existing projects. Those who are interested to see more details on the projects are invited to register to the platform. Thereby this section also should attract new users to register on the platform and create an own profile on the Collaborative Knowledge Base.

Connect - Forum
Following the general approach of encouraging communication and collaboration between stakeholder groups, some topics have been suggested for users willing to participate in the forum, such as: Offering a free wall, Prevent illegal graffiti, Looking for graffiti artist, Street art projects, Neighbourhood projects, Graffiti materials

Connect - Organisations
Organisations registered in the Collaborative Knowledge Base will have the option to appear in this section of the Open Information Hub, users will also be able to suggest other interesting organisations related to graffiti. This place can be used by registered organisations to be more visible to the community and citizens interested in the topic.

News - Social Media
The Social Media section gathers the most recent posts, images, and videos in Twitter, Instagram, YouTube and Flickr. Users can do quick searches by providing keywords and have full control over what he/she wants to look up. The pre-defined keywords, such as #graffitiart, #graffitiartist etc. are some suggestions that might be interesting for any kind of user who is browsing the platform.

News - Events
On top of announcing the events organized by the consortium as well as those in which partners participate with the aim to disseminate the project and the platform, this section gathers information about interesting events in the area of graffiti and street art taking place across Europe.

In addition to the translation of the interface of the platform into several languages (English, French, German, Spanish etc.) also an additional features was included. To make the platform more usable also for those who have limited skills in English an auto translate functionality was integrated. First tested showed that of course translations are not perfect but allow in most of the cases that users get the sense of the provided information. The designers also took care that the platform holds in most of the areas a high level of contrast to support people with partial vision loss. Furthermore also screen reader tools were tested (e.g Jaws). It was shown that screen readers in general work with the platform, however there are some limitations as some information is provided by mouse over (hover) effects. Not all screen readers provide such features. Thereby further optimisation on the long run should be taken into account to further improve the accessibility of the platform.

WORK PACKAGE 4: DEMONSTRATION, VALIDATION AND INSTRUCTIONS

WP4 focussed on the demonstration and instruction activities for the Graffolution platform. It started with the deployment of the initial prototype demonstrator of the platform. This was followed by the testing process of platform iterations through a range of pilot actions with demonstration partners, expert advisors, other potential users and Graffolution core team members that aimed to identify the weaknesses and opportunities of each iteration, and develop an ongoing feedback process. The feedback collected from the Digital Platform Testing formed the core usability and validation activities, and informed recommendations for subsequent development of the Graffolution platform, which is designed to continue to evolve both before and after it is made live (public). WP4 concluded with instruction activities, via the development of quick-start user manuals and video tutorials, which aim to support users and provide easy-access guidance to make the most of the Graffolution platform and resources, suited to their own respective circumstances.

Key outcomes from this work package help boost the reach of the Graffolution platform to ensure it is clear, useful and dynamic enough to serve a wide range of actors within the context of graffiti vandalism and street art challenges in urban and transport environments.

Activities, Materials and Resources
The Platform Testing Usability Studies, Validation and Instruction process principally revolved around main programmed activities: development and realisation of Test Iteration 1 - internal; Test Iteration 2 - external, and Test Iteration 3 - external (open feedback and live iteration). Each of these are described to follow. In addition to the programmed usability studies and validation process, the Graffolution platform development has benefited from constant feedback from Graffolution demonstration partners, occurring outside
the three key iterations (e.g. in our project meetings etc.), and further, from a number of expert advisors who we have been able to have separate conversations with about their expectations for the platform.

Separate to the test activities, a number of quick start guides and videos were prepared for different user/actor groups to each be able to get the most out of the platform as they discover and get to know how it could best work for them. These are described further below.

Within the demonstration processes, a number of workshops were organised as direct engagement, user-testing and feedback events. These included:
- 15th December 2015, London. The Good, the Bad and the Beautiful Graffolution conference and workshop, hosted by UAL, formed a key activity through which the research and demonstration partners of the project were able to directly engage with relevant other actors and potential platform users. The event gave presentations to inform actors/users about the platform, gathered in-person feedback on the platform through trial workshops, and enabled learning about their perspectives with an opportunity to others’ stories via the world’s first Human Graffiti Library workshop. This event was attended by over 80 participants, from at least 18 countries, representing all the actor groups identified through Graffolution research. Further details on this one day event are available at http://events.arts.ac.uk/event/2015/12/15/The-good-the-bad-and-the-beautiful-innovative-graffiti-management-for-future-European-cities-with-Graffolution
- 03rd February 2016, Paris. Rail End-Users Graffolution Workshop, organised by UIC. This event was attended by 21 participants, from 7 countries, representing railway operators, security experts and infrastructure managers. Further details can be found at: http://uic.org/com/uic-e-news/484/article/the-graffolution-rail-end-users?page=iframe_enews.
- 17th February, Munich. Germany End-Users Graffolution Workshop, organised by SINE. This event was attended by 8 participants, from Germany, representing 5 actor groups identified through Graffolution research.
- 25th February, Barcelona. Spain End-Users Graffolution Workshop, organised by Eticas. This event was attended by 9 participants, from Spain, representing 5 actor groups identified through Graffolution research.

The materials created for the WP4 demonstration, user testing and instruction processes included:

Demonstration, engagement and feedback materials and resources
An online feedback survey about the first iteration of the Graffolution Platform. This hosted via https://graffolution.typeform.com/to/bgYoym.

Workshop feedback forms and 'more of', 'less of', 'just right' flash response cards, for the Graffolution Platform Testing Iteration 2-external, via The Good, the Bad and the Beautiful event on 15th December 2015.

In addition to these feedback formats, the current live version of the www.graffolution.eu platform has an embedded third and ongoing iteration of testing and feedback, via a feedback function built into the platform. This will allow the site to be maintained and updated drawing on continual end-user inputs via an open invite to all who visit the site.

The Human Graffiti Library resources - created for the workshop hosted during the Graffolution event on the 15th December 2015 in London - have since been made available by the Extending Empathy project (AHRC funded), as a set of resources for others to be able to adopt and facilitate similar workshops, via this link http://extendingempathy.com/outputsoutcome/human-graffiti-library-event. In particular, the Graffiti Human Library workshop was able to bring individuals face-to-face in a safe environment where they could share their experiences, make contact and find ways that they can work together. The attendees also informed us about their experiences, which help the fruition of some of the features for the Graffolution platform. Another significant outcome of this process was that some of the attendees were from backgrounds that the research did not reach before, such as art conservation specialists and advertisers.

The resources and materials first used during the Graffolution event of 15 December 2015 and subsequently available for others to download.

Instructional Materials
Quick start guides to the online platform have been produced for each stakeholder group, which are aimed at promoting the use of the platform by giving an overview of the different sections as well as highlighting the features that can be more interesting for each of them. These guides have been translated to French, German and Spanish and printed versions were and will be distributed at several events or, as in the case of the third factsheet, through the collaboration of organisations. As an example, during the Rail End-users Workshop held at UIC's headquarters (3rd February 2016), the Quick Start Guide for Transport Operators was distributed among the
attendees.

Instructional videos
Additionally within the WP4 activity a number of guidance or instruction videos were produced by SYNYO, and made public by Graffolution, to enable potential users to familiarise themselves with the two main sections of the Graffolution Platform. These are accessible here: https://www.youtube.com/playlist?list=PLm87DrgWSqerUFAyJ_lpUyc22Kf9LvdSEo

Potential Impact:
IMPACT

The Graffolution project created a web-platform that addresses a wide range of actors from a diverse field of experience and specialism including state/local authorities, transport operators, law enforcement, social/cultural projects, manufacturers and suppliers, street art networks, graffiti writers and collectives, researchers and also different types of partnerships, alliances and initiatives that consist of several of the mentioned actors. With the Collaboration Knowledge Base and the Open Information Hub the Graffolution platform consist of two parts. The distinction of the two parts is based on different target groups with different tasks and ambitions.

The Collaborative Knowledge Base is a virtual meeting point for all stakeholders and experts in the field of graffiti vandalism prevention. They can search for other local, national or pan-European stakeholders to get in contact and collaborate in further projects. Concrete descriptions of responses to graffiti vandalism will allow stakeholders to identify the best options they have. New best practices can be included and updated by the stakeholders and should lead to improved graffiti prevention strategies based on proven knowledge of other stakeholders in Europe. Besides the best practices the stakeholders will be able to share data such as recent statistics and documents (e.g. reports and policy briefs). This data is of utmost importance to assess the current situation of graffiti vandalism, find appropriate partners and develop new measures. Due to the fact that most stakeholders operate against graffiti vandalism with very limited resources, the platform is created as system which is easy to use and designed along the requirements of the stakeholders. The Open Information Hub is designed to raise awareness among citizens and writers. The platform provides information on free walls and connect people who are interested in graffiti art to support creative expression without damaging property. Citizens who are heavily affected by illegal graffiti will find useful information on prevention opportunities they can take and important contacts they can refer to if they become victims of graffiti vandalism. The Open Information Hub increases the awareness on the issue but also seeks to include writers in local communities to find appropriate ways that create more liveable environments for all citizens.

Graffolution provides a new and comprehensive approach to discover unused potential for collaboration and knowledge exchange on local and pan-European level and involves the public to reduce illegal graffiti significant and sustainable. The following list shows main ambitions that can be achieved through the Graffolution platform on the long run:

- Raised awareness on graffiti vandalism
- Improved security in public areas and transport
- Improved living environments
- Reduction of illegal writers who face lifelong negative effects
- Preventing adolescents and young adults from getting injured or killed
- Raise health protection among writers and removal personnel
- Minimising costs on removal and prosecution
- More efficient use of stakeholders resources against graffiti vandalism
- Evolvement of street art and the preservation of cultural heritage
- Improve policy making on the strategic level
- Knowledge exchange on a pan-European level

While the project focused in the first project period mainly on establishing a stable research fundament on graffiti and graffiti vandalism prevention and in the second year on developing and launching the platform, more time will be needed to identify and assess impacts the project is able to create. Therefore the consortium also asked for an extension of the project duration. This wasn't granted by the funding authority. However, the Graffolution platform will be further maintained and additional stakeholders and dutyholders will be invited to participate. Based on the activities performed in the last project months (event, workshops) and the promising feedback of the user tests following forthcoming impacts of the project are:

- The fact that Graffolution could become an extremely important source of reference about graffiti across Europe, given the diverse
resources, perspectives, stakeholders and knowledge it concentrates. It will be a very valuable resource also for academics as well as for practitioners and will contribute to a much more informed and objective public debate about the topic.

- The effect that the project findings and resulting tools can have in improving the evaluation and fostering the rethinking of response strategies by promoting a multidisciplinary and multistakeholder understanding of the phenomenon, which acknowledges both, its negative and positive effects across different contexts.
- The potential of the platform and the dissemination activities, shaped by the empirical demonstration, that more inter stakeholder communication and collaboration is performed. Bringing together very different kinds of stakeholders into a common dialogue space, where all their perspectives are represented and considered.
- The enhancement of international collaboration and knowledge exchange regarding graffiti management by all kinds of related stakeholders.

The activities surrounding the Graffolution platform development and testing proved to have an impact on the reach of the project. The platform reached out to a wide range of actors in the context of graffiti and street art in urban space and transport environments. This also helped to connect diverse stakeholders and dutyholders even before the launch of the platform and be aware of its potentials. In addition to the impact of the Graffolution platform itself, the Graffolution research and project activities have also enabled additional live Response Action/Implementation test activities by UAL. As the research reflected in various stages, evaluation of graffiti and street art responses seems to be the weakest and underexplored area among stakeholders and dutyholders with specific relation to managing or otherwise engaging in this terrain. Thus the objective of the Response Action/Implementation test is to evaluate a sample of the graffiti response strategies that could soon be integrated into the Graffolution platform. This process is starting with an additional live (online and on-site) test activity, which will be assessed and made public after the formal close of the project period but periodic updates will be posted on the Graffolution platform. The live and context-situated tests, referred to as Open Galleries pilots, will be undertaken in collaboration with the London Borough of Islington (demonstration partner) and other Graffolution expert advisors and organisations (such as Difusor, Global Street Art, Thanet District Council Community Safety team and Wood Street Walls). This process will be able to open doors to new collaborations and new test sites. The outcomes of this process will be shared with the stakeholders and possibly have an impact on the future decision making processes.

Additional impacts include:
- Graffiti Sessions, 3 day international event, organised between UAL, UCL and Southbank Centre, partly informed by Graffolution state-of-the-art research.
- Persona work which informed an empathy workshop with MAID students at UAL.
- Graffolution project has created connections with graffiti dutyholder and stakeholder communities that have led to pending trials of new modes of management agreed between UAL with Islington, Walthamstow, Brighton, Thanet (Margate) and potentially also Bristol, in the UK.
- Central Saint Martins’ hosting of the „Graffiti and Street Art Dilemmas in London“ exhibition, drawing partly on Graffolution-informed research.
- New working relationships from UAL with a number of new cultural and community organisations and educational groups, in relation to their relations and responses to graffiti, street art and graffiti vandalism in their local environments.
- In February 2016 also workshops were conducted in Paris, Barcelona and Munich. The Graffolution platform and central findings of the Graffolution project were presented. Attendees replied that they will use the platform and will report to colleagues about the Graffolution platform, hence will work as multipliers for the Graffolution idea.

Besides scientific publications and conferences the Graffolution project also had impacts on academic teaching. For instance the contents and problematics analyzed by Graffolution have been included in a teaching seminar by prof. Mariona Tomàs (UB) in the first semester of 2015/16 academic course. The seminar was called “Urban politics” and is an optional subject in the Public Administration Degree at the Faculty of Law of the University of Barcelona. The work was divided in two phases. First, students were given some lectures and were asked to read some articles and reports on graffiti’s problematic. Second, students had to choose a municipality from the Metropolitan Area of Barcelona and analyse three items regarding graffiti: 1) existence of local laws or regulations on graffiti; 2) existence of graffiti vandalism monitoring, reporting and management tools, and 3) existence of pro-social activities lead by the local government or community groups. Students had to do some field work (like interviews) and deal with different type of documents and data. The result was a collection of different experiences regarding graffiti in the Metropolitan Area of Barcelona. The Graffolution project was also the basis of the seminar ‘Graffiti’ at the University of Applied Sciences in Munich (HM) in the winter term 2015/2016. With input regarding the Graffolution topic, research process and results the students developed research issues in the context of graffiti and carried out own research projects. Research reports were produced by 15 students. A second seminar on the topic ‘Graffiti’
will be conducted in summer semester 2016 at the HM. In addition, two lectures were given at the University of Applied Science Kempten, showing the 'Graffiti as a specific kind of communication'.

The impact of the project is also reflected by the demonstration partners and their benefits based on the project activities and the created Graffolution platform.

FGC
On FGC's point of view, the Graffolution project will have several positive impacts thorough the platform:
• Increase of social awareness of the costs of graffiti.
• Sharing with other public transport operators, city officials, police and other experts from the public and private sectors about different solutions intending to fighting against illegal graffiti (best practices): police reporting, anti-graffiti treatment on trains, perimeter enclosures in train depots, instructions to the drivers to check the sides of the train when they stop on dead end sidings, mediation with the Juvenile Prosecution Service and civility campaigns, among others.
• In the case of FGC and the main railway operators in Spain, the Graffolution project is a clear opportunity to help us to achieve main objectives, which are formulated in the Rail Transport Civility Observatory: formulate a coordinated operational response to antisocial acts, share information of graffiti acts detected on trains, identify graffiti perpetrators in other companies in order to make police action easier and allow the companies to be present at the lawsuits, strengthening deep bonds between railway operators and the educational system to prevent irresponsible behaviour and debate about different experiences of mediation with minors who have committed vandalism actions and their families, with a high pedagogical impact and the participation of the Minors Public Prosecutor's Office and social workers from the municipalities.
• Evaluation of the effectiveness of the measures applied by other public transport operators and its reflection in monitoring statistics.
• Looking for new measures of a preventive nature that work effectively in other cases and that could be implemented in railway transport.

LBI
The London Borough of Islington is pleased to have been able to input to the progression of the Graffolution platform as Demonstration Partner and anticipates it will be useful to help evidence new practices among institutional colleagues and other organisations with whom we collaborate. Some of the core staff will use the platform to keep up to date with current practices and news related to controlling and managing graffiti from around Europe. LBI will also continue to feed back as the live platform evolves, so that it grows to be even more useful for environmental crime and maintenance teams, plus related practitioners. In parallel to the engagement with the platform itself London Borough of Islington will join the Open Galleries pilots, guided by UAL (see above). They are providing test site(s) to pilot this new opportunity as part of better overall management in relation graffiti and graffiti vandalism, making use of pro-social activities.

UIC
The Graffolution Platform is the type of project result that railway stakeholders expect from collaborative EU research projects. On the one hand it includes all the practical recommendations and resources collected and produced during the project, and on the other hand it represents a tool for collaboration and exchange between relevant stakeholders. In this way the Graffolution platform allows the dissemination of practical project results in a way that is useful and exploitable even beyond the life of the project. First, it is an efficient dissemination tool since the share of best practice and resources on graffiti prevention is essential for the railways (the transportation system where illegal graffiti is still the most common form of vandalism). In the future the platform could be used as a permanent solution to train relevant actors from the railway industry such as infrastructure managers, station managers, security managers and security staff. Periodic training of key security persons from railway companies is crucial because these persons often change.
Second, the Graffolution platform is a tool that will help railway stakeholders change their traditional approach to graffiti prevention, which is focused on anti-social strategies (e.g. the zero-tolerance policy, physical barriers, anti-graffiti coatings, surveillance, enforcement activities). The main impact of the Graffolution platform is that it challenges this view by including pro-social interventions in combination to anti-social ones. Pro-social interventions include mural projects, free walls, open galleries and arts-led regeneration activities, and some of these strategies could also be applied in the railway system. On the long run, the Graffolution platform may thus change the railway culture regarding graffiti management and provide support for systematic advisory services for UIC members.

DISSEMINATION
The role of the dissemination activities within the project was essential to guarantee the success and sustainability of the Graffolution platform as well as to maximize the impact that the research outcomes can have in positively influencing stakeholders’ approaches and responses to graffiti. The aim of the dissemination activities was to engage and consolidate a diverse and balanced (in terms of countries and stakeholder groups) community of users that can keep growing through a network effect beyond the end of the project. Therefore, the main goals of the dissemination strategy, which have guided the dissemination activities of the project, were:

1) Effectively communicating the key findings and recommendations from the project’s research while promoting the use of the platform to follow the recommended actions, such as improving strategy design and policy evaluation.

2) Engaging all different stakeholder groups (in a balanced proportion) in the evolution of the platform and encouraging them to use it in a dynamic and interactive way.

The general approach behind the dissemination activities was to promote mutual awareness, inter-stakeholder collaboration, cost-effective and inclusive approaches to graffiti management, as well as the role of the platform in facilitating them. Due to the diversity and complexity of the perspectives and positioning around the topic, the consortium has relied on the involvement of a close circle of stakeholders (Expert Advisory Board, Interview partners, own networks and contacts) in order to collect their feedback about the tools and recommendations proposed, and then spreading them to a broader audience after being refined.

The main groups that have been targeted by the communication activities of the project are:

- Decision and policy makers
- Transport operators
- General Public, Media and Victims
- Enterprises
- Educational, social and cultural organizations
- Graffiti Writers
- Scientific Community

All these groups, relate to graffiti in very different ways, are generally interested in different facts and tools about the research and the platform, and pay attention to different communication channels. Therefore, Graffolution has sought to approach each target group in the best possible way through the following dissemination channels/activities:

Project website
The project website provides a general overview of the project, the platform and the consortium and contains the public deliverables.

Graffolution platform
The Graffolution platform contains features that are aimed at helping different stakeholder groups and which have been promoted through the dissemination activities and materials, such as the Quick Start Guides to the online platform.

Personal communications (telephone/email)
Information about the project has been sent to contacts which could be potentially interested in Graffolution.

Newsletters, factsheets and materials
Newsletters and factsheets have been sent in different languages in order to update the interested stakeholders about the progress of the project and the platform.

Social Networks
Graffolution has actively promoted and used its Twitter, Instagram and YouTube accounts and encouraged the interaction with the platform through social media channels by adding Share options, discussions via Twitter and content from YouTube, Flickr and Instagram.

Blogs
Graffolution has used blogs, such as “Design against Crime” or “I Support Street Art”, in order to promote its events and provide information about the project.
Scientific publications
Articles have been published based on the findings and cases identified throughout the project.

Workshops and meetings
Several workshops have been organised in order to spread the results and recommendations of the project and promote the Graffolution platform while collecting feedback during trial sessions.

Conference attendance
All partners have presented the project in several local and international conferences about street art, crime prevention, safety, and urban design.

Engagement with policy makers
This engagement has been done through meetings, workshops, policy briefs’ distribution and personal communications. D5.6. provides a complete description of such activities and includes the final version of the policy briefs.

Media communications and press releases
Press releases and articles have been published at several international newspapers as well as through UIC’s e-News.

Brochures, flyers
Factsheets and Quick Start Guidelines to the online platform have been produced in a flyer and brochure format, respectively in order to promote the use of the platform.

Dissemination via external events
Graffolution has been present at external events about security research, graffiti and street art.

Liaison with and dissemination via related projects
The partners have explored collaboration possibilities with projects and initiatives that share and fit within Graffolution’s approach.

D5.5 will provide a detailed report about all the above mentioned dissemination activities and how they have been used to reach the different stakeholder groups. The table below provides a brief overview of the dissemination activities’ impact:

- Number of newsletter subscribers: +300
- Number of tweets: +320
- Number of twitter followers: +200
- Earned impressions on twitter (last three months): +24,100
- Number of blog posts (where Graffolution was mentioned): +40
- Number of participants at events (workshops, events, conferences etc.): +3,000
- Views project website (all time): +8,000
- Views project website (last month): +850
- Number of countries from which users visited the project website (all time): +65
- Views Graffolution platform (last months): +12,000
- Number of countries from which users visited the Graffolution platform (last month): +25
- Instagram Likes (all time): +3,000
- YouTube Views (last month): +400
- Scientific Publications: 4 + 7 pending

EXPLOITATION

The Graffolution platform was designed and developed as a sustainable resource that serves for variety of stakeholders as a central point of information gathering, improving and sharing of knowledge and initiate collaboration. Main research insights were transferred to the platform and tools were integrated that can be used by interested users as well as professionals working in the area of graffiti and graffiti vandalism prevention. To ensure that the platform stays a useful resource over the upcoming years the consortium established a list of opportunities that may be used for further commercial and non-commercial exploitation of the outcomes of Graffolution. These can be found in deliverable D5.6 (confidential).
The exploitation strategy (D5.6) explains the most relevant steps to exploit the Graffolution project over the upcoming months. Further discussions between the consortium partners will take place to define detail roles and responsibilities. The mentioned exploitation steps may also reveal further needs and requirements of interested users and professionals. These findings can contribute to extend the platform also in future and ensure it remains an important resource for the community. While the consortium was during the project lifetime mainly working on the research outcomes and the development of a full functional platform the commercial exploitation steps will start after the end of the project. However, especially in the last project months already several actions were started that support the setup phase. This includes for instance the attraction of many stakeholders to the platform with events and workshops as well as contacting potential users (including city administrations, transport organisations, police and law enforcement services, enterprises, NGOs and graffiti writers). Currently there is no comparable platform available. Initial interest in future cooperation were already mentioned by organisations from all kinds of areas including technical research, software developers that create new services, small and big enterprises, public administrations and transport services. This shows a high potential for further commercial and non-commercial exploitation of the platform as a whole. For the following months after the project end it will be important to constantly raise awareness on the platform, identify further organisations and potential service providers that could be integrated and perform detailed market research activities to plan all further exploitation steps.

Besides a general exploitation of Graffolution also individual exploitation actions were and will be taken by each partner. Most of the partners will exploit the outcomes also for further scientific purposes including new research papers and presentations at conferences (see D5.5). As shown in D5.6 also further commercial and non-commercial exploitation opportunities are considered including:

- Development new concepts and software solutions
- Contract work
- Advisory services in the fields of graffiti vandalism prevention
- Seminars
- Open Galleries pilots
- Form better strategies for responses on graffiti vandalism
- Improve evaluation procedures of current and new strategies
- Follow up projects aiming at testing and evaluating responses

List of Websites:
Project Website: http://project.graffolution.eu/
Graffolution Platform: http://www.graffolution.eu/
Email: office@graffolution.eu
Twitter: @graffolution/
Instagram: https://www.instagram.com/graffolution/

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