



RAGE

Realising and Applied Gaming Eco-system

Research and Innovation Action

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RAGE – WP10 – D10.2

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EXECUTIVE SUMMARY

What data will be collected, processed or generated during the RAGE project? Following what methodology and standards? And what data will be shared and/or made openly available, and how will it be curated and preserved? These issues are typically described in a Data Management Plan (DMP), outlining how research data is handled during and after the project is completed.

The RAGE DMP specifically provides guidelines on ethics, data protection and open research data access to RAGE researchers involved in WP5 (Case experiments) and WP8 (Validation)¹. Ethics and data protection are especially relevant in view of the games and audiences targeted by RAGE. Therefore RAGE is one of the participating projects in the EU open research data pilot, an initiative under Horizon 2020 that aims at improving and maximising the access to and re-use of research data created in European projects.

This document is the first out of three iterations of the DMP that will be formally delivered during the project. Version 2 is due in month 24 and version 3 towards the end of the project. The DMP thus is not a fixed document; it evolves and gains more precision and substance during the lifespan of the project.

In this first version we describe the planned research data sets related to the RAGE evaluation and validation activities, and the fifteen principles that will guide data management in RAGE. The former are described in the format of the EU data management template, and the latter in terms of their guiding principle, how we propose to implement them, and when they will be implemented. This document is thus first of all relevant to WP5 and WP8 members.

¹ In case we add a data set about business models in the next version of the DMP, WP7 will be included as well.

1 INTRODUCTION

RAGE participates in the EU open research data pilot and as such will deliver a Research Data Management Plan (D10.2). Open access to research data refers to the right to access and re-use digital research data under the terms and conditions set out in the Grant Agreement. Openly accessible research data can typically be accessed, mined, exploited, reproduced and disseminated free of charge for the user.

The DMP is not a fixed document; it evolves and gains more precision and substance during the lifespan of the project.

This first version of the DMP is delivered in month 6 of the project. As the project evolves, updates of this plan are required at least mid-way (month 24) and at the end of the project (in preparation for exploitation).

1.1 The EU open research data pilot

References to research data management are included in Article 29.3 of the Model Grant Agreement:

Regarding the digital research data generated in the action ('data'), the beneficiaries must:

(a) deposit in a research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge for any user — the following:

(i) the data, including associated metadata, needed to validate the results presented in scientific publications as soon as possible;

(ii) other data, including associated metadata, as specified and within the deadlines laid down in the data management plan

According to the EU open research data pilot, a Data Management Plan² (DMP) describes the data management life cycle for all data sets that will be collected, processed or generated by the research project. It is a document outlining how research data will be handled during a research project, and even after the project is completed, describing what data will be collected, processed or generated and following what methodology and standards, whether and how this data will be shared and/or made open, and how it will be curated and preserved.

Each dataset that will be generated by the project has to be described in terms of five dimensions in compliance with the template provided by the Commission (see Annex 1):

- Data set reference and name: a unique persistent identifier for the data set
- Data set description: a description of the data set which specifies the origin, scope, scale, beneficiaries and the link to the corresponding publications (if any).
- Standards and metadata: a reference to relevant standards and a description of the metadata schema adopted to describe the data.
- Data sharing: all the information concerning access and reuse of the dataset including the nature of access (open or restricted), the tools or software needed, the reference and type of the repository where data are stored.
- Archiving and preservation (including storage and backup): long-term preservation procedures, costs and volume of preserved data.

The DMP describes the data management life cycle of research data. Open access to the publications based on these research data (the 'golden road' to open access through Open Access publications, or the 'green road' through access to repositories and/or self-archiving³) are out of scope for the DMP and are described in the RAGE Dissemination plan.

² From: Guidelines on Data Management in Horizon 2020, Version 1.0, 11 December 2013

³ From: <http://www.openaccess.nl/whatisopenaccess>

1.2 The RAGE data management approach

In addition to the above EU-requirements on data sets, the RAGE Grant Agreement⁴ outlines the project's data management approach, comprising fifteen elements. These fifteen elements not only address the data management lifecycle but also address how to meet recent EU-guidelines and European and national legislation on ethics and data protection.

The three organizing principles are:

- **Ethics**, where the guiding principles are informed consent, privacy, voluntary participation, and (personal) data ownership (the right to change or delete personal data).
- **Data protection**, where the guiding principles are security in collection, storage, retrieval and destruction of data; anonymized personal data and confidentiality.
- **Open access**, where the guiding principle is that research data should be/remain available to fellow researchers free of charge for validation and (re)use.

The scope of the DMP (D10.2) partly overlaps with two other project deliverables:

- D8.1 '*RAGE Evaluation Framework and Guidelines*' which will be delivered in month 12 by Technische Universität Graz. This deliverable will describe the overall evaluation approach of RAGE and will contain guidelines on conducting evaluation work and on how to apply the DMP-principles to the pilot evaluations: "*Guidelines will be defined as a manual for carrying out empirical evaluation and data collection in the game development and application scenarios...*"⁵
- D5.5 '*First version scenario arrangement document - round 1*' to be delivered in month 18 by Okkam. It covers pilot aspects related to ethics: "*... informative materials for briefing the organisations (e.g. schools), teachers and students involved, e.g. explaining the research, instructions, requirements, measures for support/helpdesk, informed consent logistics, data policy and privacy policy quality assurance, debriefing and reporting.*"⁶

The month-6 version of the DMP therefore serves as input to these deliverables, which in turn, will be taken up and feed into upcoming versions of the DMP (in M24 and M48).

⁴ Annex 1 - Description of Action Part B, page 128

⁵ Annex 1 - Description of Action, page 35

⁶ Annex 1 - Description of Action, page 24

2 THE RAGE DATA MANAGEMENT PLAN – MONTH 6

This first version of the DMP (month 6) comprises of two sections:

- The RAGE data management template. The template lists the foreseen research data sets in terms of their five dimensions as outlined in Annex 1. These data sets relate to the three main evaluation objects (assets, applied games, and ecosystem) and their related audiences (end users, training providers and game developers).
- The fifteen principles of the project's data management approach and how and when these will be implemented.

2.1 RAGE data management templates

Evaluation and validation of the RAGE results focuses on three groups of data sets, as follows:⁷:

- **Assets:**
 - Usability
 - Software quality
- **Applied games:**
 - Pedagogical effectiveness
 - User experience
 - Cost-benefit data
- **Ecosystem services and processes:**
 - Quality
 - Benefit

In D8.1 'RAGE Evaluation Framework and Guidelines' these will be further elaborated into evaluation questions, evaluation criteria, and methods for collecting and analyzing data to holistically evaluate the RAGE technologies.

The aspects on which evaluation data will be collected are evolving in the course of elaborating the evaluation framework. So here only the preliminary and general data sets are indicated. In follow-up versions of the DMP, these may be broken down into more detailed sets of variables on which evaluation data is collected.

Table 1 Data set: Assets – usability

Data set: Assets – usability	
Reference and name (identifier)	Once the data set is created and stored in an open access repository, its generated Digital Object Identifier will be published.
Description	Data on the ease with which functional software assets can be used (understood, learned, used and are considered attractive) by a game developer in creating a game, and data on their acceptability - whether and how the software assets will be used in the real game development world ⁸ . Data are collected through (online) questionnaires, structured observations and prototyping. Data collection is based on both shared instruments and

⁷ Annex 1 - Description of Action, p. 35

⁸Bevan, N., Kirakowski, J., Maissel., J. What is Usability? Proc. of the 4th Int. Conf. on HCI, Stuttgart, Germany, Sept. 1991

	<p>independent local instruments. In due time the scientific publications based on these data and their authors⁹ will be referenced here as well.</p>
Standards and metadata	<p>A potential standard to which evaluation data on assets' usability may be referenced is ISO 9241 Ergonomics of Human System Interaction. Part 110 of the standard refers to dialog principles for the design and assessment of information systems. The available standard questionnaires on implementing the ISO 9241 may serve as the basis for the (meta)data definitions.</p>
Data sharing	<p>Regarding storage, identification and access to data RAGE will comply with national and institutional data protection initiatives that aim to harmonize approaches and systems. To this end data sets may either be managed by: a) the local research institute in its own research data repository which will be included in a register of research data repositories like Re3data, or b) will be deposited with a trusted repository certified by the TrustedDigitalRepository.eu, like DANS. RAGE anticipates using relational database CSV-like formats for open data sharing. RAGE will further investigate these two options, and in the next version of the DMP come up with a preferred solution. The data sets will be deposited under a Creative Commons license (CC-BY).</p>
Archiving and preservation	<p>Archiving and preservation requirements will be important considerations in the selection of an open access repository. Participant data will be subjected to technical data protection procedures (collection, storage, retrieval and destruction) in accordance with EU legislation (Data protection Directive 95/46/EC and its amendments) and national legislation. Destruction of research data will not take place in the near future (at least 5 years after project termination), unless a participant requests it. Requirements will evolve from D8.1 and be included in the next version of the DMP.</p>

Table 2 Data set: Assets - software quality

Data set: Assets - software quality	
Reference and name (identifier)	<p>Once the data set is created and stored in an open access repository, its generated Digital Object Identifier will be published.</p>
Description	<p>Data on the quality (e.g. effectiveness, productivity, safety, satisfaction, perceived benefit) of the functional software assets, with a focus of the game development process. Data are collected through questionnaires, structured observations, prototyping, or interviews/focus groups. Data collection is based on both shared instruments and independent local instruments. In due time the scientific publications based on these data and their authors will be referenced here as well.</p>
Standards and metadata	<p>No definite standards have been identified yet, but RAGE will investigate the existence of software quality metadata schemes like ISO/IEC 25010:2011 - Systems and software engineering -- Systems and software Quality Requirements and Evaluation (SQuaRE) -- System and software quality models¹⁰.</p>
Data sharing	<p>Regarding storage, identification and access to data RAGE will comply with national and institutional data protection initiatives that aim to harmonize approaches and systems. To this end data sets will either be managed by: a) the local research institute in its own research data repository which will be included in a register of research data repositories like Re3data, or b) will be deposited with a trusted repository certified by the TrustedDigitalRepository.eu, like DANS. RAGE anticipates using relational database CSV-like formats for open data sharing. RAGE will further investigate these two options, and in the next</p>

⁹ E.g. through unique global IDs like ORCID IDs

¹⁰ http://www.iso.org/iso/catalogue_detail.htm?csnumber=35733

	version of the DMP come up with a preferred solution. The data sets will be deposited under a Creative Commons license (CC-BY).
Archiving and preservation	<p>Archiving and preservation requirements will be important considerations in the selection of an open access repository.</p> <p>Participant data will be subjected to technical data protection procedures (collection, storage, retrieval and destruction) in accordance with national and EU legislation.</p> <p>Destruction of research data will not take place in the near future (at least 5 years after project termination), unless a participant requests it. Requirements will evolve from D8.1 and be included in the next version of the DMP.</p>

Table 3 Data set: Applied games - pedagogical effectiveness

Data set: Applied games - pedagogical effectiveness	
Reference and name (identifier)	Once the data set is created and stored in an open access repository, its generated Digital Object Identifier will be published.
Description	<p>Data on learning performance or knowledge transfer collected to investigate the gain in knowledge and/or skills and the transfer to real-world settings from learning with games.</p> <p>Data will be collected through explicit data collection before/after engaging with serious games (e.g. knowledge/transfer tests tailored to the specific knowledge domain and scenario; self or peer assessment), as well as through in-game evaluation (via an evaluation asset and user data analytics assets for applied games).</p> <p>In due time the scientific publications based on these data will be referenced here, as well.</p>
Standards and metadata	Existing learning and assessment standards will be investigated, selected and applied.
Data sharing	<p>Regarding storage, identification and access to data RAGE will comply with national and institutional data protection initiatives that aim to harmonize approaches and systems.</p> <p>All user data originating from research data collection instruments will either be managed by: a) the local research institute in its own research data repository which will be included in a register of research data repositories like Re3data, or b) will be deposited with a trusted repository certified by the TrustedDigitalRepository.eu, like DANS. RAGE will further investigate these two options, and in the next version of the DMP come up with a preferred solution. RAGE anticipates using relational database CSV-like formats for open data sharing. These data sets will be deposited under a Creative Commons license (CC-BY).</p> <p>Common tracking and logging data needed for running the games are stored and managed by the game companies in the secure user databases of the games' delivery platforms. These will not become openly accessible. Data tracked by the evaluation and analytics assets and applied for evaluation purposes will be made available (in appropriately aggregated and anonymized form).</p>
Archiving and preservation	<p>Archiving and preservation requirements will be important considerations in the selection of an open access repository.</p> <p>Participant data will be subjected to technical data protection procedures (collection, storage, retrieval and destruction) in accordance with national and EU legislation.</p> <p>Destruction of research data will not take place in the near future (at least 5 years after project termination), unless a participant requests it. Requirements will evolve from D8.1 and be included in the next version of the DMP.</p>

Table 4 Data set: Applied games - user experience

Data set: Applied games - user experience	
Reference and name (identifier)	Once the data set is created and stored in an open access repository, its generated Digital Object Identifier will be published.
Description	Data on users' reaction to and experience of the applied games, e.g. in terms of satisfaction, appreciation, attitude, motivation, usability aspects. Data will be collected through explicit data collection before/after gaming experience, via questionnaires, structured observations, or interviews/focus groups. This data collection will be based on both shared instruments and independent local instruments. In addition, data will also be gathered through an evaluation asset for in-game evaluation in applied games to collect in-game interaction data, like data about user behavior during the game and the type and number of interactions performed by the user while playing. In due time the scientific publications based on these data and their authors will be referenced here as well.
Standards and metadata	No suitable standards have been identified yet. RAGE will investigate the existence of standards and metadata schemes, as the specific aspects/variables of user experience targeted evolve.
Data sharing	Regarding storage, identification and access to data RAGE will comply with national and institutional data protection initiatives that aim to harmonize approaches and systems. All user data originating from research data collection instruments will either be managed by: a) the local research institute in its own research data repository which will be included in a register of research data repositories like Re3data, or b) will be deposited with a trusted repository certified by the TrustedDigitalRepository.eu, like DANS. RAGE will further investigate these two options, and in the next version of the DMP come up with a preferred solution. RAGE anticipates using relational database CSV-like formats for open data sharing. These data sets will be deposited under a Creative Commons license (CC-BY). Common tracking and logging data needed for running the games are stored and managed by the game companies in the secure user databases of the games' delivery platforms. These will not become openly accessible. Data tracked by the evaluation and analytics assets and applied for evaluation purposes will be made available (in appropriately aggregated and anonymized form).
Archiving and preservation	Archiving and preservation requirements will be important considerations in the selection of an open access repository. Participant data will be subjected to technical data protection procedures (collection, storage, retrieval and destruction) in accordance with national and EU legislation. Destruction of research data will not take place in the near future (at least 5 years after project termination), unless a participant requests it. Requirements will evolve from D8.1 and be included in the next version of the DMP.

Table 5 Data set: Applied games – cost-benefit data

Data set: Applied games – cost-benefit data	
Reference and name (identifier)	Once the data set is created and stored in an open access repository, its generated Digital Object Identifier will be published.
Description	Data gathered from game industry/developers in the context of the application scenarios, addressing the costs and benefits of the applied games from a supply side – e.g. current or prospective costs in terms of development or maintenance costs, subjective analysis of prospective benefits – to analyse the estimated cost impact and potential return on investment. Data will be collected through interviews and surveys, potentially combined with market research. This data collection will be based on (largely) shared

	<p>instruments.</p> <p>In due time the scientific publications based on these data and their authors will be referenced here as well.</p>
Standards and metadata	No suitable standards have been identified yet. RAGE will investigate the existence of relevant available standards.
Data sharing	<p>Regarding storage, identification and access to data RAGE will comply with national and institutional data protection initiatives that aim to harmonize approaches and systems.</p> <p>All data originating from research data collection instruments will either be managed by: a) the local research institute in its own research data repository which will be included in a register of research data repositories like Re3data, or b) will be deposited with a trusted repository certified by the TrustedDigitalRepository.eu, like DANS. RAGE will further investigate these two options, and in the next version of the DMP come up with a preferred solution. RAGE anticipates using relational database CSV-like formats for open data sharing. These data sets will be deposited under a Creative Commons license (CC-BY).</p> <p>Data containing any sensitive business information will not be made openly accessible.</p>
Archiving and preservation	<p>Archiving and preservation requirements will be important considerations in the selection of an open access repository.</p> <p>Participant data will be subjected to technical data protection procedures (collection, storage, retrieval and destruction) in accordance with national and EU legislation.</p> <p>Destruction of research data will not take place in the near future (at least 5 years after project termination), unless a participant requests it. Requirements will evolve from D8.1 and be included in the next version of the DMP.</p>

Table 6 Data set: Ecosystem services and processes – quality

Data set: Ecosystem services and processes – quality	
Reference and name (identifier)	Once the data set is created and stored in an open access repository, its generated Digital Object Identifier will be published.
Description	<p>Data on the quality of the ecosystem services and processes for different stakeholder groups in the context of applied games, in terms of e.g. effectiveness, productivity, safety, and usability aspects. Data are collected through questionnaires, ratings, prototyping, or interviews/focus groups. Data collection is primarily based on shared instruments. In addition, from common logging and tracking data gathered and managed by the ecosystem, relevant data on the usage of the ecosystem will be explored and used for evaluation purposes.</p> <p>In due time the scientific publications based on these data and their authors will be referenced here as well.</p>
Standards and metadata	No suitable standards have been identified yet. RAGE will investigate the existence of relevant and suitable standards and metadata schemes.
Data sharing	<p>Regarding storage, identification and access to data RAGE will comply with national and institutional data protection initiatives that aim to harmonize approaches and systems.</p> <p>All user data originating from research data collection instruments will either be managed by: a) the local research institute in its own research data repository which will be included in a register of research data repositories like Re3data, or b) will be deposited with a trusted repository certified by the TrustedDigitalRepository.eu, like DANS. RAGE will further investigate these two options, and in the next version of the DMP come up with a preferred solution. RAGE anticipates using relational database CSV-like formats for open data sharing. These data sets will be deposited under a Creative Commons license (CC-BY).</p> <p>Log data tracked by the ecosystem will be made openly available (in appropriately aggregated and anonymized form) to the extent it is used for</p>

	evaluation purposes.
Archiving and preservation	<p>Archiving and preservation requirements will be important considerations in the selection of an open access repository.</p> <p>Participant data will be subjected to technical data protection procedures (collection, storage, retrieval and destruction) in accordance with national and EU legislation.</p> <p>Destruction of research data will not take place in the near future (at least 5 years after project termination), unless a participant requests it. Requirements will evolve from D8.1 and be included in the next version of the DMP.</p>

Table 7 Data set: Ecosystem services and processes – benefit

Data set: Ecosystem services and processes – benefit	
Reference and name (identifier)	Once the data set is created and stored in an open access repository, its generated Digital Object Identifier will be published.
Description	<p>Data on users' perception of ecosystem services and processes, e.g. in terms of attitude, perceived added value, usefulness, user acceptance, or impact.</p> <p>Data will be collected through explicit data collection via questionnaires, prototyping, or interviews/focus groups with shared instruments. In addition, usage data logged by the ecosystem will be exploited for evaluation purposes and complement subjective evaluation feedback.</p> <p>In due time the scientific publications based on these data and their authors will be referenced here as well.</p>
Standards and metadata	No suitable standards have been identified yet. RAGE will investigate the existence of standards and metadata schemes, as the very specific aspects/variables targeted evolve.
Data sharing	<p>Regarding storage, identification and access to data RAGE will comply with national and institutional data protection initiatives that aim to harmonize approaches and systems.</p> <p>All user data originating from research data collection instruments will either be managed by: a) the local research institute in its own research data repository which will be included in a register of research data repositories like Re3data, or b) will be deposited with a trusted repository certified by the TrustedDigitalRepository.eu, like DANS. RAGE will further investigate these two options, and in the next version of the DMP come up with a preferred solution. RAGE anticipates using relational database CSV-like formats for open data sharing. These data sets will be deposited under a Creative Commons license (CC-BY).</p> <p>Log data tracked by the ecosystem will be made openly available (in appropriately aggregated and anonymized form) to the extent it is used for evaluation purposes.</p>
Archiving and preservation	<p>Archiving and preservation requirements will be important considerations in the selection of an open access repository.</p> <p>Participant data will be subjected to technical data protection procedures (collection, storage, retrieval and destruction) in accordance with national and EU legislation.</p> <p>Destruction of research data will not take place in the near future (at least 5 years after project termination), unless a participant requests it. Requirements will evolve from D8.1 and be included in the next version of the DMP.</p>

2.2 Implementing the RAGE research data management approach

2.2.1 RAGE research data management approach and its implementation

The RAGE Grant Agreement outlines fifteen elements as part of its data management approach. Below we list each of them together with their proposed implementation strategy.

#	RAGE DM principle	Description ¹¹	Proposed implementation actions	Implementation
1	RAGE EDP-group	Within RAGE we will install an internal ethics and data protection group for identifying mechanisms for handling personal data properly and for the alignment across different pilots.	Form the RAGE ethics and data protection group comprising Eric Kluijfhout, Rubén Riestra, Christina Steiner, Sabina Guaylupo, Andrea Molinari and Matthias Hemmje. This group is responsible for compiling the first version of the DMP delivered in month 6.	M6
2	Localised responsibility	We will opt for a decentralised approach, since the particular approaches and preferences to ethics and data protection is at the discretion of the separate research partners. Every out of 6 local pilots will be assigned a local responsible researcher to take into account local ethical guidelines and data protection procedures as well as transcending EU guidelines and regulations.	Each research institute involved in a pilot and/or empirical evaluation assigns a national responsible researcher. As a first task this researcher will collect information on institutional and national ethical guidelines and data protection procedures and share this. Next, the responsible researchers will discuss their findings. The preliminary outcomes will serve as input to the <i>RAGE Evaluation Framework and Guidelines</i> (D8.1, month 12).	Names available in M6 for all partners who will be involved in empirical data collection or, respectively, for all countries where evaluation data will be collected.
3	Localised procedures	The pilots will conform to local/institutional procedures and approvals by local/institutional ethics and data protection authorities. Signed copies of approvals will be timely made available to the European Commission.	The national responsible researcher submits the pilot research design to the respective institutional and/or national authorities, and upon approval make this available to the European Commission. Ethical approvals will be collected and stored by the data protection group. The pilots mainly relate to T8.5 <i>Validation studies in application scenarios</i> , but this principle relates to all WP8 tasks in which data is collected. Defining the exact procedure within the context of the pilot design and execution is a shared responsibility between WP5 (Task 5.1: <i>Aligning the approaches to application scenario arrangement</i>) and WP8 (Task 8.1: <i>RAGE Evaluation Framework and Guidelines</i>).	Will be included in RDMP version 2, M24
4	Data collection instruments	The collection of research data will be based on both shared instruments and independent local instruments.	Guidelines on data collection instruments will be formulated as part of D8.1 <i>RAGE Evaluation Framework and Guidelines</i> (month 12). Data collection instruments are selected in line with the evaluation questions addressed and the evaluation setting. Where possible, shared instruments have preference. Where available and suitable,	Will be included in RDMP version 2, M24

¹¹ See Annex 1 - Description of the Action Part B, page 128

			standardized and/or established instruments are used. For 'ad-hoc' data collection, e.g. requirements analysis, testing and formative evaluation of assets by developers etc. a first set of guidelines will be made available in M8.	
5	Data protection at various levels	RAGE aims to develop good practice and will comply with national and institutional data protection initiatives that aim to harmonise the approaches and systems (e.g. DANS).	The 'national responsible researchers' will investigate the present status of their local institutional and national research data repositories (e.g. do they exist; are they recognized as a trusted digital repository by e.g. TrustedDigitalRepository.eu; can they be located through a registry service like re3data.org). They will share this information to come up with a proposed RAGE policy on institutional/national/international data storage and protection procedures and tools for decision making by the SMB.	Will be included in RDMP version 2, M24
6	Participant personal data ownership	All data are owned by the participant, who is entitled to withdraw his/her data from the sample at any time.	The option to withdraw data from the research data set will be included in the Information Letter. Contact details of the data management service will be included in all information channels to the pilot participants. Mechanisms for retrieving and deleting participant data will be devised well before M12 in time for inclusion in D8.1.	<M12
7	Complaints service	RAGE will arrange a complaints service for participants.	This will be a multi-staged service: located at the institutional (the research institute) level, with the option to escalate to the project level (Technische Universität Graz as responsible for the evaluation and validation activities). At the institutional level it will tie in with existing institutional and national privacy procedures. Contact details will be included in all information channels to the pilot participants.	Will be included in RDMP version 2, M24
8	Information letter	In the Information Letter RAGE will clearly communicate its research intentions, its ambition to make the anonymised research data openly available, and its eventual commercial perspectives.	See Annex 2 for the proposed outline. Based on the information letter consent from evaluation participants outside the project will be collected (in case of minors also from their parents). Data collected from/exchanged between consortium partners for day-to-day project activities does not need explicit consent collection as this is covered by the CA. If however data from partners is collected for evaluation purposes and/or for publication purposes, also partner consent is required. As partners are familiar with the purpose of the RAGE project, this consent form can be fairly straightforward (see Annex 3).	Outline M6

9	Open data sharing	RAGE anticipates to use relational database csv-like formats for open data sharing.	This will apply to data sets deposited in local/institutional repositories as well as national and international ones.	Will be included in RDMP version 2, M24
10	Technical data protection	Participant data will be subjected to technical data protection procedures (collection, storage, retrieval and destruction) in accordance with national and EU legislation.	The 'national responsible researchers' will include the issue of data protection procedures in their analysis of the local/national status (as part of #5). Local research data repositories need to be identifiable through a register of research data repositories like Re3data, and be certified by the TrustedDigitalRepository.eu.	Will be included in RDMP version 2, M24
11	Data storage location	Common tracking and logging data needed for running the games are stored and managed by the game companies in the secure user databases of the games' delivery platforms. All user data originating from research data collection instruments (e.g. online questionnaires) are securely stored and managed during the research by the responsible local research institute.	The game companies will provide information on the security of their user databases (location of the hosting services, backup and recovery procedures) to the 'national responsible researchers' who will assess these against national guidelines and legislation. RAGE will draw up requirements/protocol for storing and managing user data at the local research institute as part of D8.1.	Will be included in RDMP version 2, M24
12	Anonymised data	Anonymity of collected and pre-existing user data is effected as a first step after data collection. Personal user data are replaced with a unique identifier, while coded tables remain available for restoring the original dataset.	A unified approach will be drawn up, outlining the main procedural steps and management of the identifier list.	<M12
13	Ecosystem users	User data collected from the Ecosystem will be stored and managed securely and remain under the full control of the end-users.	This is a requirement for the selection and configuration of the ecosystem-tools in WP6. The data will also be used for evaluation purposes. The requirements will be implemented as part of the Ecosystem (launch month 20).	<M20
14	Research data preservation	Most scientific journals require the preservation of research data for 5 years or longer after the publication of a paper. Therefore, destruction of research data will not take place in the near future, unless the participant would request for this.	Needs no further elaboration.	Will be included in RDMP version 2, M24
15	Audio- and video recordings	Since it is hard to anonymise audio and video recordings, individuals will be	See Annex 4 for the proposed outline.	M6



		<p>explicitly informed about such recordings, their purpose, privacy protection and usage conditions/intentions. In principle research recordings will be destructed unless otherwise agreed. Also audio or video recordings for publicity purposes will always go with detailed prior information and informed consent.</p>		
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With respect to the DM Principles n°2 Localised responsibility, n° 3 localised procedures and n° 5 data protection a various levels, the RAGE consortium and especially the Data Management Group is aware that the current legal status in the Member States is changing.

We are aware that the EC is working on a new single law (under Regulation scheme¹²) on Data Protection. This new regulation aims to update and modernise the principles enshrined in the 1995 Data Protection Directive and doing away with the current fragmentation among Member States on this issue.

If during the duration of the project the situation changes the RAGE consortium will take the appropriate measures in order to comply with the new situation.

Meanwhile and regarding especially to DM Principle n° 6 Participant data ownership, n° 8 Information letter and n° 10 Technical data protection the current Directive 95/46/EC applies as well as national legislation.

¹² http://ec.europa.eu/justice/data-protection/document/review2012/com_2012_11_en.pdf

2.2.2 RAGE data management use case

The fifteen data management principles are elaborated in this use case:

The educational provider (WP5) defines the target audience and the educational requirements for the pilot game. The game company (WP4) develops the game, while the educational provider delivers its educational content. Ethics and data protection are explicit – non-educational – requirements in the game design and its underlying data management procedures and tools.

The educational provider recruits pilot participants from the target audience, respecting ethic requirements (informed consent, voluntary participation etc.). The research institute (WP8) provides detailed information to the educational providers on purpose and implications of the pilots which these providers use in their recruitment of participants; sets up the research structure around the validation studies by defining and creating data collection tools and procedures, manuals, etc.; and trains staff of the educational provider on research data collection during pilot execution. Ethics and data protection are explicit requirements in the research design and its procedures and tools.

In both the game design and the research design the frame of reference for ethics and data management comprises national/institutional and transcending European guidelines and legislation. An assigned local (national) researcher is responsible for their correct implementation in the pilot, and their approval by the local/institutional ethics and data protection authorities. A signed copy of the approval will be made available to the European Commission.

The educational provider, research institute and game company in cooperation conduct the pilot. User data are collected a) as part of the game design/scenario, and b) additionally and specifically for research purposes. The final research data set may combine both (in-game data and additionally collected research data). Anonymity of collected and pre-existing user data is effected as a first step after data collection.

The research data set is securely stored and managed by the local research institute. This is guided by ethics-, data protection-, and open access requirements from the local research institute and national and EU-legislation and guidelines on harmonization of data management approaches and systems like DANS and the use of relational database in csv-like formats.

ANNEX 1: DMP TEMPLATE FOR EU OPEN RESEARCH DATA

The purpose of the Data Management Plan (DMP) is to provide an analysis of the main elements of the data management policy that will be used by the applicants with regard to all the datasets that will be generated by the project.

The DMP is not a fixed document, but evolves during the lifespan of the project.

The DMP should address the points below on a dataset by dataset basis and should reflect the current status of reflection within the consortium about the data that will be produced.

- **Data set reference and name**

Identifier for the data set to be produced.

- **Data set description**

Description of the data that will be generated or collected, its origin (in case it is collected), nature and scale and to whom it could be useful, and whether it underpins a scientific publication. Information on the existence (or not) of similar data and the possibilities for integration and reuse.

- **Standards and metadata**

Reference to existing suitable standards of the discipline. If these do not exist, an outline on how and what metadata will be created.

- **Data sharing**

Description of how data will be shared, including access procedures, embargo periods (if any), outlines of technical mechanisms for dissemination and necessary software and other tools for enabling re-use, and definition of whether access will be widely open or restricted to specific groups. Identification of the repository where data will be stored, if already existing and identified, indicating in particular the type of repository (institutional, standard repository for the discipline, etc.).

In case the dataset cannot be shared, the reasons for this should be mentioned (e.g. ethical, rules of personal data, intellectual property, commercial, privacy-related, security-related).

- **Archiving and preservation (including storage and backup)**

Description of the procedures that will be put in place for long-term preservation of the data. Indication of how long the data should be preserved, what is its approximated end volume, what the associated costs are and how these are planned to be covered.

ANNEX 2: RESEARCH INFORMATION LETTER

Local partners will verify the text below with national legislation, and translate for the pilot target audiences.

Research information letter for participants in the RAGE demonstrator/pilot/research

RAGE, Realising and Applied Gaming Eco-system, aims to develop, transform and enrich advanced technologies from the leisure games industry into self-contained gaming assets that support game studios at developing applied games easier, faster and more cost-effectively. These assets will be available along with a large volume of high-quality knowledge resources through a self-sustainable Ecosystem, which is a social space that connects research, gaming industries, intermediaries, education providers, policy makers and end-users.

To have more information about the RAGE project, please visit: <http://www.rageproject.eu/>

Text to be added here on the following:

- Purpose of the pilot/demonstrator/research
- What will be researched
- How will the research be executed
- What is expected from the participant in participating in/playing the demonstrator game
- What is expected from the participant in participating in the pilot/research (on top of participating in/playing the demonstrator game)
- Possible advantages, disadvantages and other implications of participating in the demonstrator/pilot/research
- How will your data be used and managed?
- How to withdraw your personal information?
- Where to direct any additional questions?

Participation is on a voluntary basis. The participant may withdraw his/her participation at any moment.

PARTICIPANT FULL NAME _____
 DATE OF BIRTH _____
 ADDRESS _____
 CONTACT TELEPHONE _____
 EMAIL ADDRESS _____
 SIGNED _____ DATED _____

In case the individual is under <age> years of age or is a vulnerable adult:

FULL NAME PARTICIPANT _____
 PARENT/GUARDIAN _____
 ADDRESS _____
 CONTACT TELEPHONE _____
 EMAIL ADDRESS _____
 SIGNED _____ DATED _____

RAGE senior local research coordinator: <name>, <function>

Contact details: <address>, <tel.>, <e-mail>

RAGE validation coordinator: <name>, <function>

Technische Universität Graz,

Rechbauerstrasse 12,

Graz 8010, Austria

This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 644187.



ANNEX 3: PARTNER CONSENT FORM DATA COLLECTION

Data collection consent form for RAGE project partners

Text to be added here on which data will be collected and for what purpose

I agree, in name of the RAGE partner organization for which I participate in the RAGE project, on the collection and use of these data.

PARTICIPANT FULL NAME _____

RAGE PARTNER ORGANISATION _____

CONTACT TELEPHONE _____

EMAIL ADDRESS _____

SIGNED _____ DATED _____

RAGE senior local research coordinator: <name>, <function>

Contact details: <address>, <tel.>, <e-mail>

RAGE validation coordinator: <name>, <function>

Technische Universität Graz,

Rechbauerstrasse 12,

Graz 8010, Austria

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ANNEX 4: INDIVIDUAL PHOTOGRAPHY, FILMING AND INTERVIEWING CONSENT FORM FOR PILOT PARTICIPANTS

Local partners will verify the text below with national legislation, and translate for the pilot target audiences.

Individual photography, filming and interviewing consent form for RAGE pilot participants

EVENT: <event, activity>

VENUE: <venue>

DATE: <.../.../...>

PHOTOGRAPHER/CREATOR OF RECORDING: <name>, <e-mail>, <tel.>

PERSON RESPONSIBLE FOR RECEIVING CONSENT FORM: <name>, <e-mail>, <tel.>

This form is to be signed by the person (or parent/guardian if the individual is under <age> years of age or is a vulnerable adult) who has agreed to be photographed and/or filmed and/or recorded for the RAGE project which is executed under coordination of the Open University of the Netherlands. The purpose of this form is to seek consent for the photographs and/or films and/or recordings to be taken and subsequently to be used in a number of media, including print and the web by the RAGE project. The RAGE project, through the Open University of the Netherlands, in turn offers a commitment to only allow said pictures and recordings to be used appropriately and sensitively.

I, the undersigned, consent to the use of my image and/or recordings of my voice being used by the RAGE project. I understand that the image and/or recordings will be used for promotion and dissemination purposes only and that copyright in the image and/or recordings will be retained by the Open University of the Netherlands as the coordinator of the RAGE project.

I acknowledge that the image and/or recording may also be used in, and distributed by, media pertaining to the RAGE project other than a printed publication, such as, but not limited to, CD-ROM or the World Wide Web.

Copyright restrictions placed on the RAGE project prevent the content being sold or used by way of trade without the express permission of the copyright holder. Images and recordings may not be edited, amended or re-used without prior permission from the RAGE project coordinator. Personal details of those taking part are never made available to third parties.

I require/do not require that my name is removed/retained in association with the shots and/or recordings {please delete as appropriate}

FULL NAME _____

DATE OF BIRTH _____

ADDRESS _____

CONTACT TELEPHONE _____

EMAIL ADDRESS _____

SIGNED _____ DATED _____

In case the individual is under <age> years of age or is a vulnerable adult:

FULL NAME PARENT/GUARDIAN _____

ADDRESS _____
CONTACT TELEPHONE _____
EMAIL ADDRESS _____
SIGNED _____ DATED _____

RAGE project coordinator: Prof. Dr. Wim Westera
Open University of the Netherlands
P.O. Box 2960
6401 DL Heerlen
The Netherlands

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This form is adapted from the Web2Rights 3.10 Model Consent Form



ANNEX 5: INDIVIDUAL PHOTOGRAPHY, FILMING AND INTERVIEWING CONSENT FORM FOR PROJECT PARTNERS

Individual photography, filming and interviewing consent form for project partners

This form is to be signed by the RAGE project member who has agreed to be photographed and/or filmed and/or recorded for the RAGE project which is executed under coordination of the Open University of the Netherlands. The purpose of this form is to seek consent for the photographs and/or films and/or recordings to be taken and subsequently to be used in a number of media, including print and the web by the RAGE project for the full project period (February 1, 2015 till January 31, 2019) and its subsequent exploitation. The RAGE project, through the Open University of the Netherlands, in turn offers a commitment to only allow said pictures and recordings to be used appropriately and sensitively.

I, the undersigned, consent to the use of my image and/or recordings of my voice being used by the RAGE project and its subsequent exploitation. I understand that the image and/or recordings will be used for promotion and dissemination purposes only and that copyright in the image and/or recordings will be retained by the Open University of the Netherlands as the coordinator of the RAGE project during the project execution phase.

I acknowledge that the image and/or recording may also be used in, and distributed by, media pertaining to the RAGE project other than a printed publication, such as, but not limited to, CD-ROM or the World Wide Web.

Copyright restrictions placed on the RAGE project prevent the content being sold or used by way of trade without the express permission of the copyright holder. Images and recordings may not be edited, amended or re-used without prior permission from the RAGE project coordinator. Personal details of those taking part are never made available to third parties.

I require/do not require that my name is removed/retained in association with the shots and/or recordings {please delete as appropriate}

FULL NAME _____

ORGANISATION _____

ADDRESS _____

CONTACT TELEPHONE _____

EMAIL ADDRESS _____

SIGNED _____ DATED _____

RAGE project coordinator: Prof. Dr. Wim Westera
 Open University of the Netherlands
 P.O. Box 2960
 6401 DL Heerlen
 The Netherlands

This project has received funding from the *European Union's Horizon 2020*



research and innovation programme under grant agreement No 644187.
This form is adapted from the Web2Rights 3.10 Model Consent Form

ANNEX 6: PHOTOGRAPHY AND FILMING PERIMETER SIGN

Photography and filming will take place in this area between <hour> am and <hour> pm on <date> <year>.

The photographs and films will be used by the RAGE project for promotion and dissemination purposes, and may be published on the RAGE project website and on other websites.

Press, other media or organisations may also be present, whose photographs and film of this event may be published and broadcast, including on the Internet.

If you do not wish to appear in the photographs or films, please avoid this area at the times given above.

Thank you for your co-operation.

RAGE event coordinator: <name>, <function>

Contact details: <tel.>, <e-mail>

RAGE project coordinator: Prof. Dr. Wim Westera

Open University of the Netherlands

P.O. Box 2960

6401 DL Heerlen

The Netherlands

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