Deliverable 1.2: Quality and Knowledge Management Plan

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Work Package 1: Project and Innovation Management

InVID - In Video Veritas: Verification of Social Media Video Content for the News Industry

Innovation Action

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Abstract:

The Quality and Knowledge Management Plan of the InVID project is outlined in this deliverable, including the methodology, activities and measures that will be employed for realizing this plan throughout the project's life. It starts by introducing the adopted policies for monitoring and assuring the quality of the activities related to innovation management, research, software development, project deliverables preparation and the overall progress of the project based on the defined timeplan. Then, it proceeds with the documentation of rules and definitions related to the management of knowledge and intellectual property, and reports on a number of intellectual property assets that will be generated within the consortium, specifying factors related to their protection and assessibility. The Quality and Knowledge Management Plan of the InVID project is a working document that evolves during the lifespan of the project, and an updated version of this plan, improved by integrating findings concerning quality assessment and the management of created knowledge as the project progresses, will be submitted to the European Commission in Month 21 of the project (September 2017).

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1 Introduction

This deliverable documents the Quality and Knowledge Management Plan of the InVID project and introduces the procedures and materials that are necessary for realizing this plan throughout the project's life, in accordance with the activities described in T1.3 Quality, data and knowledge management.

The description of this plan starts in Section 2, where the actions related to the quality management are introduced. Driven by the fact that InVID is an Innovation Action, and aiming to bring innovative solutions to the industry and market, we initially define our stategy for innovation management (see Section 2.1). Then, we present our strategy for monitoring and assuring the quality of: (a) the project's research activities (see Section 2.2), (b) the developed software (see Section 2.3), (c) the foreseen project deliverables (see Section 2.4) and (e) the overall progress according to the predefined timeplan for the project (see Section 2.5). Following, Section 3 reports our management plan concerning the extracted scientific knowledge and the created intellectual property assets by the project consortium. The production of these assets will be performed ensuring that no ethical requirements are being violated. The knowledge management plan of the project is outlined in Section 3.1, by discussing a set of rules and definitions related to the management of the provided or produced knowledge and intellectual property assets by the members of the consortium, and describing an established procedure for publication notification among the InVID partners. Then, the identified IP assets of the project are reported in Section 3.2 at a per-workpackage basis (see Sections 3.2.1 to 3.2.7). For each asset we specify its ownership and the adopted management policy concerning its protection and accessibility. The last Section 4 gives a brief summary of the information reported in the deliverable.

The InVID Quality and Knowledge Management Plan is a working document that evolves during the lifespan of the project. For this reason an updated version of it, enhanced by exploiting the findings and the decisions made as the project proceeds, will be produced and delivered as part of deliverable D1.3 titled "Updated Data, quality and knowledge management plan", which will be submitted to the EC in Month 21 of the project (September 2017).

1.1 History of the document

Table 1: History of the document

Date	Version	Name	Comment
11/03/2016	V0.1	E. Apostolidis, V. Mezaris, CERTH	Skeleton of the deliverable
20/03/2016	V0.2	S. Papadopoulos, CERTH	First input from WP3 and comments on v0.1

23/03/2016	V0.3	R. Garcia, UdL	Addition of WP4 IP assets
23/03/2016	V0.4	J. Spangenberg, R. Bouwmeester, T. Koch, DW	Addition of WP6 IP asset
25/03/2016	V0.5	G. Innerwinkler, G. Rudinger, APA-IT	Addition of WP7 IP assets
25/03/2016	V0.6	D. Teyssou, AFP	Addition of Innovation Management section, WP8 IPAssets, Question on WP3 IPAssets
29/03/2016	V0.7	L. Nixon, MODUL	Addition of WP2 IP assets
31/03/2016	V0.8	J. Thomsen, Condat	Addition of WP6 IP assets
01/04/2016	V0.9	G. Innerwinkler, G. Rudinger, APA-IT	Correction in WP6 IP assets, concerning APA-IT
06/04/2016	V0.10	A. Scharl, WLT	Addition of WP5 IP assets
15/04/2016	V0.11	E. Apostolidis, V. Mezaris, CERTH	Complete version submitted for Quality Assurance
20/04/2016	V0.12	T. Koch, DW	QA commented version of the deliverable
28/04/2016	V1.0	E. Apostolidis, S. Papadopoulos, V. Mezaris, CERTH	Final document after Quality Assurance, submitted to the EC

2 Quality management

In InVID, quality management refers to a number of different aspects related to the progress and implementation of the project, and relies on a set of commonly agreed internal activities which ensure that the developments, expected outcomes (we refer the reader to the Project expected outcomes part of Annex I: Project outcomes and measures of success) and deliverables of the project will meet or exceed the originally defined requirements, specifications and expectations. Quality management is a constant procedure that will be performed throughout the project lifecycle, and its objective is to ensure that the project will run in accordance with the contractual requirements and specifications. The following subsections introduce the defined procedures and materials for assuring the quality of project activities related to: (a) innovation management, (b) research, (c) software development, (d) project deliverables, and (e) the overall project progress according to the established timeplan for its completion.

2.1 Innovation management

With InVID being an **innovation action**, we have put a strong focus from the start of the project on solving users' problems and bringing innovative solutions to the industry and market. To achieve this goal, we decided to use **Design Thinking** methods and tools to get the project on the innovation track from the start and to solve “real life” problems. In a nutshell, Design Thinking is a trans-disciplinary toolbox which aims to foster collaboration, brainstorming, ideation, invention, creation and ultimately innovation in project management, through iterative short cycles described in Figure 1. By applying this methodology we tend to make the consortium partners converge towards a common understanding of the problems to solve, while encouraging divergent “thinking out of the box” and creative and innovative ideas.

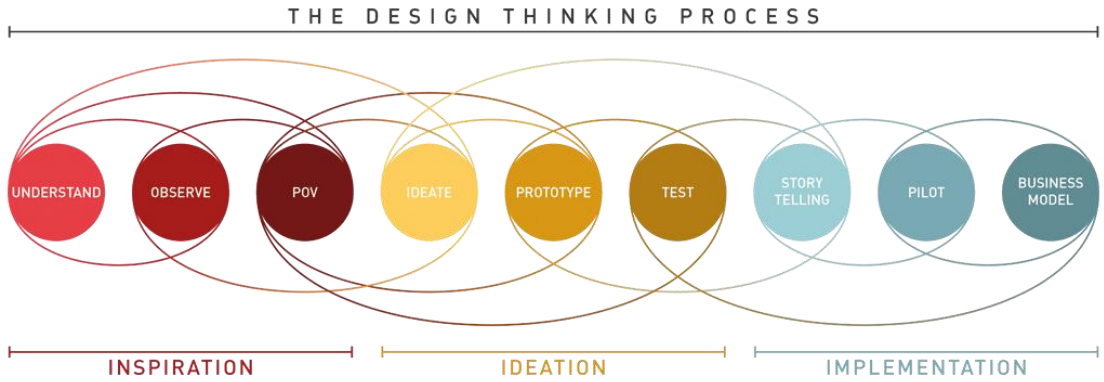

Figure 1: An illustration of the design thinking process (courtesy of d.school Paris)

The strong initial focus (**Inspiration** in the image above) is on user needs but rather than merely asking users to write down what they need, it is about observing users performing their daily work, talking to them and identifying problems, inefficiencies, bottlenecks, repetitive tasks, time losses and so on. In this respect, it is about using anthropological or ethnographical methods to observe and analyse the users' needs in a situation. Such studies have been conducted in WP6 on recent newsworthy events such the Brussels bombings of March 22nd and through interviews of experts, both from the industrial partners of InVID and from other mainstream media and TV channels with a strong experience on UGC verification on social networks.

The second stage is **ideation**: bringing ideas to solve concrete problems, rapidly launching prototypes to test and check with the users if the envisioned solution does the job. Through iterative cycles, prototypes will be refined to really meet the users' feedbacks.

The third stage will be **implementation** when the optimized prototype comes to life through a pilot and reaches the market as a “real product”, with business models options. We plan to achieve this by:

- **observing and analyzing** what are the current manual procedures to verify videos in the news business and beyond, by identifying inefficiencies and eliminate them, by automating repetitive tasks and craft processes, by ideating novel solutions to solve untackled problems;
- **prototyping** early, by **testing** with users to get quick feedback in order to refine the proposed solution and to adjust it to what is needed to solve the problem;
- **visualizing** each stage of the process through sketches, mockups, mindmaps, videos, grabs, interviews, and so on. **Visualization** is one of the main tools. It helps to bridge the gap between partners and to converge toward a common understanding of the goal;
- refining each step through iterative loops in order to design real solutions for the industry and the market.

Innovation will be evaluated and measured not only by the industrial partners’ evaluation campaigns, but also by the media involved in our inspiration and observation stage who are eager to test and rate the tools that InVID will build to verify videos from social networks.

2.2 Research activities

A set of different factors will be monitored and evaluated for assessing the quality of the research activities of the project. This evaluation will be performed on a regular basis through the collaboration of the Steering Board of the project (composed by the Project Coordinator, the Innovation Manager and the Integration Manager) with the external Innovation Advisory Board and the external Ethics Board.

In particular, a number of success indicators and measures will be used (we refer the reader to the Success indicators and measures part of Annex), for evaluating the achieved improvement of the InVID technologies in terms of measures such as precision, recall and speed-up. In addition, our research efforts and the progress made in this direction will be evaluated through the submission and publication of the related scientific work at high-quality peer-reviewed journals and conferences.

Moreover, following the EC guidelines for Open Access to scientific publications and research data in Horizon 2020[1], the dissemination and exploitation of the research data (results, datasets, on-line services and publications) will be performed in a way that ensures the safety of sensitive data, enhances the data's accessibility, exploitability and reuse potential, and supports their long-term preservation. The evaluation of this action will be based on the provided accessibility of these materials, the documentation, shareability and usability of the developed services, and the reproducibility of the scientific outcomes that are reported in the project deliverables and publications. For further details on our Data Management Plan we refer the reader to deliverable D1.1.

Last but not least, a number of joint research activities, involving within-WP collaboration via intra-WP calls, WP-related wiki pages, and other online repositories (e.g. Google Drive, ShareLateX and GitLab) have been established. These communication mechanisms will foster the collaboration of different WPs or project partners on a common basis, ensuring the multiple validation and cross checking of the research outcomes.

2.3 Software development

The development of the necessary software components of the InVID platform, applications and systems will be based on an agile development and validation cyclic approach. As presented in Figure 2, each cycle requires the collaboration of almost all WPs of the project and starts with the specification and prioritization of the industry requirements by WP6. Then, WP2 to WP4 assess the existing technology in order to refine the recorded requirements, while the most appropriate technology according to these requirements is selected, adapted and exposed to the InVID platform. Consequently, WP5 and WP6 are responsible for the integration of the selected technologies into the InVID platform and applications. The latter are tested and validated by WP7 via an evaluation approach that includes the pilots of the project, while the outcomes of this final step of the agile development and validation cycle are an updated and re-prioritized list of requirements and a set of stable technologies that are ready for release.

[1] https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

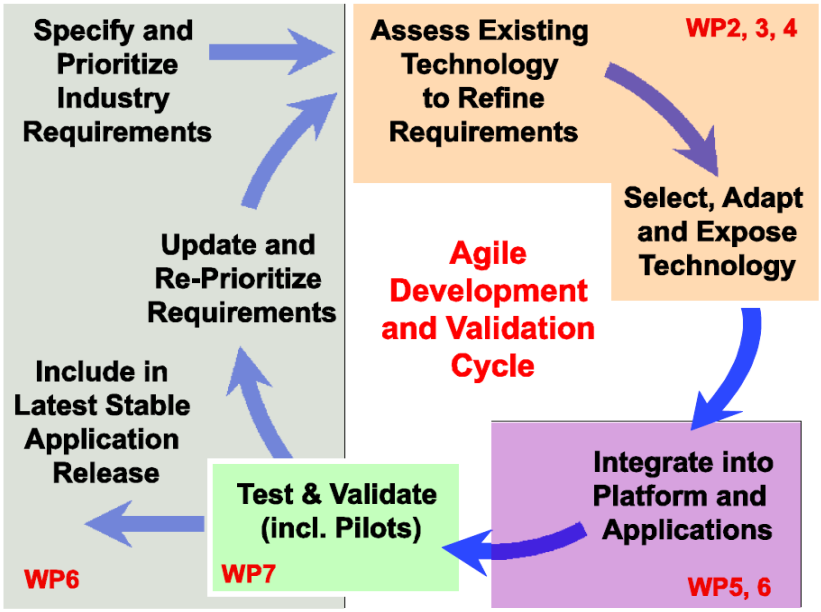

Figure 2: Agile development and validation cycle

The application of this agile methodology will be iterated nine times throughout the project's life, on the progressively updated / extended set of technologies, with the starting and ending times of each cycle being illustrated in Figure 3. At the end of this iterative software development and validation process we will have a set of fully verified and qualified InVID procedures (such as an automatic Rights Management process) and technologies (such as a method for the detection of near-duplicate content), that will fulfill the goals and support the functionalities of the InVID platform, applications and systems.

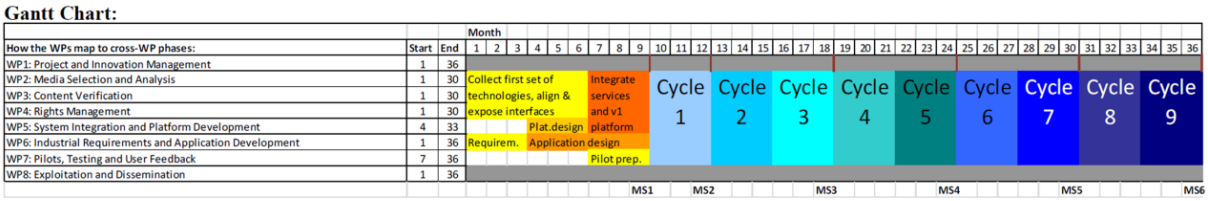

Figure 3: The nine agile development and validation cycles throughout the project

2.4 Project deliverables

Aiming to ensure the smooth preparation and evaluation of each deliverable (an expanding list with the project deliverables can be found on the project's website[2]) that will allow its timely submission to the Participant Portal of the EC, we established the following time-schedule:

[2] http://www.invid-project.eu/deliverables

- Due date – 6 weeks: the lead author(s) must circulate the Table of Contents and an early description of the deliverable's content.
- Due date – 3 weeks: a complete draft of the deliverable is submitted for Quality Assessment.
- Due date – 2 weeks: the outcomes of quality assessment are returned to the lead author(s) of the deliverable.
- Due date – 1 week: the final document is submitted to the Project Coordinator for a last check, and is uploaded to the project's wiki for all others to be able to check.
- Due date: the deliverable is uploaded to the Participant Portal.

As noted in this time-schedule each deliverable will be evaluated by being subject to a pre-defined quality assessment process that aims to ensure its top quality and, at the very minimum, its compliance with the relevant contractual obligations set in the Description of Action (DoA) document and the documentation standards of the partners of the InVID consortium. For this, one Primary Quality Assessor and, in most cases, a Secondary Quality Assessor as well (both from within the consortium and, when possible, not involved in the deliverable authoring) will be appointed for each deliverable, and will need to perform a thorough quality control of the document. In case of a technical deliverable, the Primary Quality Assessor will have technical background and the Secondary Quality Assessor will have user/business background, while in case of a business-oriented deliverable, the reverse setup will be used. After addressing the comments of the Quality Assessor(s), the authors of the deliverable will prepare a new version of it and submit it to the Project Coordinator for the last check, or if major changes were introduced, to the Quality Assessor(s) for a second review round. This version is uploaded also to the project wiki for all partners to check. In the end, the final version of the deliverable is uploaded to the Participal Portal.

The quality assessment of a deliverable shall address the following questions, and provide any necessary feedback to the deliverable's authors.

- **Coverage**
  - Does the deliverable fully cover the material prescribed in the DoA? Specifically, does it fully cover the topics that are listed for this deliverable in the “Description of deliverables” subsection of the corresponding Work Package (WP) table in the DoA? If not, is this deviation justified and has it been agreed with the Coordinator and PO?
  - Is the coverage of the different topics of the deliverable balanced, or are certain topics over- or under-stressed?
  - Are the technical components/experiments presented well and related to the tasks of the WP and to the overall InVID goals?

- **Technical content**
  - Are the methods/components (or work, in general) that are presented in the deliverable described at a sufficient and appropriate detail and technical depth, considering also the target audience of the deliverable?
  - Is the description sufficiently structured, so that it is clear what the goal of each presented method/component/work is, what its outcome is, how this outcome is generated, and what dependencies exist between the presented method/component/work and other parts of the work in InVID (if any)?
  - Are these goals, algorithmic descriptions etc. technically correct?
- **Evaluation & Innovation**
  - Is the presented work evaluated in accordance with the best practices in the related scientific field? Are the evaluation methodology, datasets, evaluation measures and all other aspects of the evaluation presented at the appropriate level of detail, and are they sound?
  - Is the relation (improvement) to previous similar work in InVID and/or other SoA works in the same field discussed and/or quantified, where possible?
  - Is the innovation of the presented methods/components (or work, in general) outlined sufficiently in the document? Does the indicated innovation fulfill the specified expectations/requirements for innovation of the WP?
  - Are the evaluation outcomes of each method/component (or work, in general) consistent and convincing according to the claimed innovation?
- **Presentation**
  - Does the deliverable follow the InVID template? Are the administrative data in the first pages of the deliverable complete? (Including the table of versions/revisions that were generated up to the delivery of the QA version)
  - Does the deliverable include all sections and annexes that it should (e.g. table of contents, executive summary, conclusions, list of references) for ensuring its high readability? Is the content of these sections appropriate and complete?
  - Are all acronyms defined (either in a glossary, or in the text when they are used for the first time), and in general is the text and all associated material (figures, tables) understandable to the reader?
  - Is the use of English satisfactory, or does the text need to be further polished due to the presence of grammatical errors, typos, etc.?
  - Is the writing and presentation style (e.g. diagrams, tables, references, structure of sections) uniform across the whole document, or are there apparent differences from section to section that need to be mitigated?

Based on the features listed and described above, the quality assessor has to perform a detailed and careful review of the deliverable, and then provide his/her comments to the authors of the deliverable by filling-in the Quality Assurance Review Form, shown below.

Quality Assurance Review for

Dx.x: title of deliverable

Deliverable No. & Title	QA for Dx.x: title of deliverable
Quality Assessor	...
Date	...
Filename	...

InVID - In Video Veritas

www.invid-project.eu

Deliverable Assessment Objectives

Coverage

Your detailed comments:

Overall: Assess the coverage of the deliverable, in comparison to the specifications included in the Description of Action document:

☐ High ☐ Fair ☐ Poor

Technical Completeness

Your detailed comments:

Overall: Assess the technical completeness of the deliverable:

☐ Excellent ☐ Good ☐ Poor

Evaluation & Innovation

Your detailed comments:

Overall: Assess the appropriateness of the evaluation and level of innovation of the work presented in the deliverable:

☐ High ☐ Moderate ☐ Poor

Presentation

Your detailed comments:

Overall: Assess the presentation of the work reported in the deliverable:

☐ Excellent ☐ Good ☐ Poor

Final recommendation

This document is acceptable in the current state. ☐

This document is acceptable with minor revisions. ☐

This document is acceptable with major revisions ☐

(new quality assurance review required after a major revision).

Additional Comments:

Please check the box below if the following statement applies:

☐ Additional detailed comments for the authors and/or minor corrections made directly on the text (using track changes) are included in a QA-annotated version of the deliverable that accompanies this form.

Comments to the coordinator (not to be sent to the authors):

2.5 Overall project progress and compliance with the timeplan

The overall progress of the project according to the contractual obligations, and its compliance with the predefined timeplan for fulfilling these obligations will be based on the determined, and commonly agreed by all members of the InVID consortium, list of project milestones. The list of these milestones presented in Table 1 is a time-schedule of the activities that need to be performed by specific time-points in the project's life, in order to ensure the timely delivery of the project deliverables, and the development, verification and qualification of the InVID technologies.

Table 1: List of project's milestones (MS)

MS#	MS title	Due month	Means of verification
MS1	First platform release	9	The first release of the InVID platform is online and functional. Delivery of D1.1, D1.2, D2.1, D5.1, D5.2, D6.1, D8.1, D8.2.
MS2	First platform validation and initial release of verification application	12	The first release of the InVID platform is validated by completion of the first development and validation cycle (Cycle 1). The first prototype of the InVID Verification Application is functional. Delivery of D1.3, D3.1, D4.1, D5.3, D6.2.
MS3	Updated platform and verification application validation and demonstration in relevant environment	18	Completion of the third development and validation cycle (Cycle 3). The second version of the InVID Verification Application and the first versions of the UGC management systems integrating it are functional, and the Verification Application is validated and partially demonstrated. Delivery of D2.2, D4.2, D5.4, D7.1, D8.3.
MS4	InVID updated application and system prototypes demonstrated in operational environment	24	Completion of the fifth development and validation cycle (Cycle 5). The updated InVID Verification Application and UGC management systems integrating it are functional and demonstrated. Delivery of D1.4, D3.2, D4.3, D6.3.

MS#	MS title	Due month	Means of verification
MS5	InVID fully-fledged application and system prototypes demonstrated in operational environment	30	Completion of the seventh development and validation cycle (Cycle 7). All verification functionalities are integrated, and the complete InVID Verification Application and UGC management systems integrating it are demonstrated in operational environment. Delivery of D2.3, D7.2.
MS6	InVID final application and systems complete and qualified	36	Completion of the final development and validation cycle (Cycle 9). The complete, optimized InVID Verification Application and UGC management systems integrating it are qualified. Delivery of D1.5, D3.3, D4.4, D5.5, D6.4, D7.3, D8.4.

The compliance with this time-plan will be evaluated by the members of the Steering Board of the project (i.e. the Project Coordinator, the Innovation Manager and the Integration Manager) through the established communications plan. The latter includes (a) calls at the project level on a monthly basis, (b) plenary meetings on a quarterly basis, and (c) lightweight reporting at partner level on a quarterly basis, composed by a technical reporting of the work carried out in each task that effort is claimed in and an effort report about the PMs spent per task.

Last but not least, a critical factor that will be taken into account for assessing the progress made during the project's life is the achievement of a set of success indicators related to our goals for exploitation and dissemination of the project outcomes and the created scientific data.

3 Knowledge management

A set of established rules related to the management of knowledge and intellectual property in the InVID project was documented in the InVID Consortium Agreement (CA). These conventions (which are discussed and extended in the following section) aim to ensure the protection of confidential information and patenting of important knowledge that will be created during the project's lifetime.

3.1 The InVID knowledge management plan

Aiming to establish a management plan regarding the extracted knowledge and the created Intellectual Property (IP) assets during the project, the InVID consortium has defined the following set of definitions:

a) **Foreground**: the project results, including information, whether or not they can be protected, which are generated by the project. Such results include rights related to copyright; design rights; patent rights; or similar forms of protection.

b) **Ownership**: Foreground resulting from the project is owned by the participant generating it. When Foreground is generated jointly (i.e. where the separate parts of some result cannot be attributed to different participants), it will be jointly owned, unless the participants concerned agree on a different solution. In the case of “Joint Foreground”, each of the joint owners shall be entitled to use their jointly owned Foreground on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and each of the joint owners shall be entitled to grant non-exclusive licenses to third parties, without any right to sub-license, subject to conditions that include fair and reasonable compensation being provided to the other joint owner(s); these conditions are specified in the CA.

c) **Protection**: valuable Foreground will be protected by its owner(s) through filing of patent applications where possible, or other Intellectual Property Rights (IPR) protection measures. The parties undertake not to leave valuable foreground unprotected. No public disclosure of Foreground will take place before a decision is made regarding its possible protection.

d) **Background**: this refers to background information that is held by Parties prior to their accession to the Grant Agreement, as well as copyrights or other IPRs pertaining to such information, the application for which has been filed before their accession to the Grant Agreement, and which is needed to carry out the Project or for using the Foreground. Each Party shall remain the owner of its own background.

e) **Access rights**: access rights to another participant's Foreground or Background will only be granted if the requesting participant needs that access in order to carry out the project or to use in its own foreground. The details pertaining to access rights have been specified in the CA. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate Business Agreements.

Based on this group of rules, we crafted an initial record of all IP assets that will be created in the different work packages of the project, so that attention can be given to the protection of the most valuable IP by means of patents or other methods (e.g. trade secrets), while ensuring that no ethics requirements are being violated in any case. The identified IP assets are reported in detail on a per-workpackage basis in the following Section 3.2.

Moreover, the members of the InVID consortium agreed on and put in place a simple, lightweight publications notification procedure with the help of a dedicated wiki page (see a snapshot of it in Figure 4), so that partners wishing to publish or otherwise disclose project activities and results notify the other partners in good time to enable IP protection to be obtained if necessary. According to this process, prior notice of any planned publication shall be given to the other partners at least 14 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Project Coordinator and to the partner(s) proposing the dissemination within 7 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

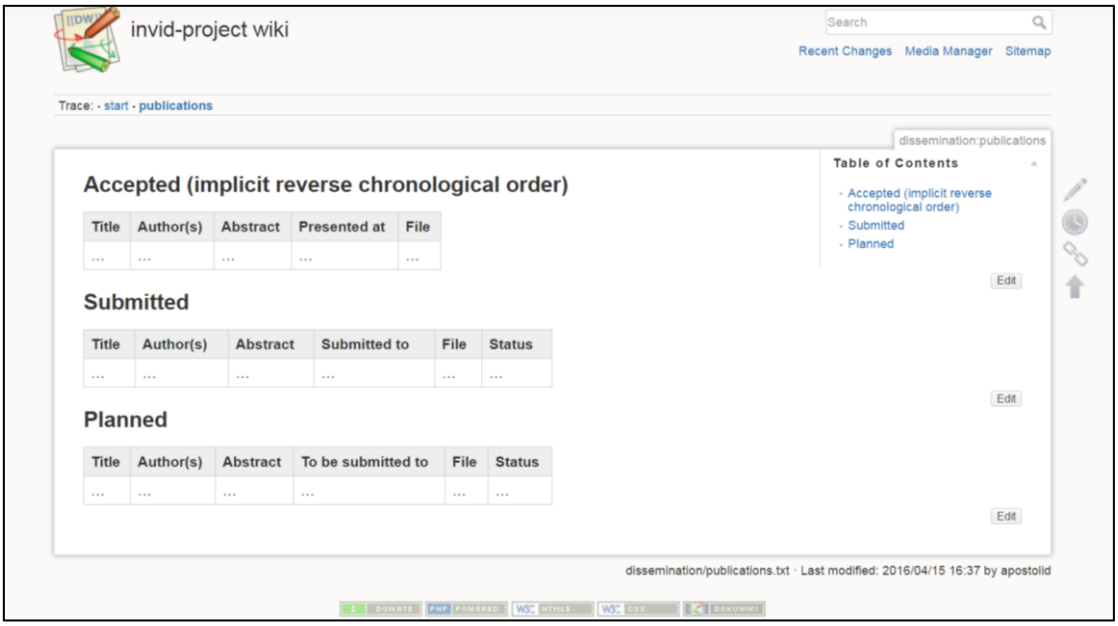

Figure 4: The wiki page that is used for the established publications notification procedure

3.2 Intellectual property assets in InVID

This section reports the intellectual property assets that will be exploited in the project, grouping them on a per-workpackage basis. As presented in the following subsections, pre-existing (Background) expertise and new (Foreground) knowledge will be blended by the project consortium for the needs of the project. Since some of these assets may correspond or relate to collections of data, links to the appropriate sections of D1.1 (which describes the Data Management Plan of the project) are provided, and the emphasis in the current document is placed on activities related to their protection.

3.2.1 WP2 IP assets

IP asset	**InVID_IP_WP2_1_TopicDetectionComponent**
Type	Foreground
Description	This IP asset will extract from a set or stream of documents (e.g. news articles, tweets) a list of detected "topics", where topics refers to clusters of documents which can be said with some confidence to jointly relate to a specific news event or story.
Ownership	MODUL Technology
Protection	This is proprietary software of MODUL Technology.
Access rights	Access rights will be granted to the InVID participants for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.
Sharing	A pre-configured version of this asset will be available for public access.

IP asset	**InVID_IP_WP2_2_UpdatedVideoFragmentationAnnotationComponent**
Type	Foreground
Description	This IP asset will be created after updating the web service for video fragmentation and annotation by: (a) integrating improved techniques for video shot/scene segmentation and concept-based annotation in terms of precision and runtime, (b) supporting new types of formats (such as JSON), and (c) extending its accessibility according to the operational needs of the InVID platform, tools and applications.
Ownership	CERTH
Protection	This is proprietary software that may use technologies patented by CERTH.
Access rights	Access rights will be granted to the InVID participants for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.

IP asset	**InVID_IP_WP2_2_UpdatedVideoFragmentationAnnotationComponent**
Sharing	A pre-configured version of this asset will be available for public access.

3.2.2 WP3 IP assets

IP asset	**InVID_IP_WP3_1_VideoForensicsComponent**
Type	Foreground
Description	This component will be built on existing experise and technologies (TUNGSTEN) for image forensics detection, extending them for tampering detection in videos. Indicative cases of doctored video that will be considered for developing this component include (among others) the detection of (a) copied and pasted parts of the video within the same video, (b) double (or more) compressions of the video, (c) inconsistencies in video's noise or lighting, (d) inconsistencies in chromatic aberration across the key frames or video which could reveal post-editing or merging of different images, (e) removal and transposition of objects, persons, and scenes from a video or between videos through inpainting techniques such as the root brush in After effects. The general aim of this component will be to determine if the video has been tampered with or not.
Ownership	EXO MAKINA
Protection	This is proprietary software of EXO MAKINA
Access rights	Access rights will be granted to the InVID partners for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.
Sharing	A restricted demo service may be made publicly available.

IP asset	**InVID_IP_WP3_2_VideoLogoDetectionComponent**
Type	Foreground
Description	This will be a module developed by CERTH that will extract overlay logos from

IP asset	**InVID_IP_WP3_2_VideoLogoDetectionComponent**
	videos and will match them against a database of known logos (see the *InVID_Data_WP3_8_TVChannelsLogos* database, reported in Section 3.2 of D1.1). Recognized logos will be linked with reference information (e.g. Wikipedia) to provide rich contextual information that helps the verification process.
Ownership	CERTH
Protection	This is proprietary software of CERTH.
Access rights	Access rights will be granted to the InVID participants for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.
Sharing	A restricted demo service may be made publicly available.

IP asset	**InVID_IP_WP3_3_ NearDuplicateDetectionComponent**
Type	Foreground
Description	This will be a module developed by CERTH that will perform indexing on a collection of input videos and will then be able to quickly find videos in that collection that are near-duplicates of a query (unknown) video.
Ownership	CERTH
Protection	This is proprietary software of CERTH.
Access rights	Access rights will be granted to the InVID participants for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.
Sharing	A restricted demo service may be made publicly available.

IP asset	**InVID_IP_WP3_4_ ContextualVerificationComponent**

IP asset	**InVID_IP_WP3_4_ ContextualVerificationComponent**
Type	Foreground
Description	This will be a module developed by CERTH that, given an input video, will provide contextual cues (e.g. tweets referencing the particular video) that could help in the verification process.
Ownership	CERTH
Protection	This is proprietary software of CERTH.
Access rights	Access rights will be granted to the InVID participants for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.
Sharing	A restricted demo service may be made publicly available.

IP asset	**InVID_IP_WP3_5_LocationDetectionComponent**
Type	Foreground
Description	This will be a web service which is trained to extract location information from social media content (e.g. title and description) and compare it to geolocation metadata from the same content, providing a verification cue for media claimed to be showing breaking news, since it could be expected that the upload location would be close to the location of the recorded event when those events have occurred very recently.
Ownership	MODUL
Protection	This service will use MODUL's license-protected RECOGNYSE tool for location identification.
Access rights	The service will be made available under the same licensing conditions as RECOGNYSE, which includes access rights to all InVID partners during the project and third party licensing possible after the project.
Sharing	A restricted demo service may be made publicly available.

3.2.3 WP4 IP assets

IP asset	**InVID_IP_WP4_1_CopyrightOntology**
Type	Foreground
Description	This will be an update of the existing Copyright Ontology, featuring concepts and relationships that improve its expressiveness in the context of User-Generated Content (UGC) and the News Industry.
Ownership	UdL
Protection	Creative Commons, open for non-commercial uses.
Access rights	Non-commercial uses will be granted if attribution is performed. Other uses might be granted to InVID partners for the needs of the project. Commercial uses beyond the previously specified will be agreed in separate business agreements.
Sharing	Creative Commons Non-Commercial and Share-Alike.

IP asset	**InVID_IP_WP4_2_CopyrightManagementModule**
Type	Foreground
Description	This module implements the requirements described in D6.1 related with rights management, Section 4.7. These requirements vary from retrieving the content owner of a piece of UGC, to facilitating that re-users or content owners in defining the conditions under which the reuse might be performed. This module will generate and use dataset *InVID_Data_WP4_1_UGCRegisteredProviders* described in Section 3.3 of D1.1.
Ownership	UdL
Protection	This is proprietary software of UdL.
Access rights	Access rights will be granted to the InVID partners for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.

IP asset	**InVID_IP_WP4_2_CopyrightManagementModule**
Sharing	A restricted demo service may be made publicly available.

3.2.4 WP5 IP assets

IP asset	**InVID_IP_WP5_1_ApplicationProgrammingInterface**
Type	Foreground
Description	This IP asset will be used to (i) manage the addition, modification, annotation, and deletion of data elements stored within the InVID knowledge repository, comprising both unstructured data in the form of text documents (e.g. postings that accompany User-Generated Videos (UGV), transcripts, related news articles) and structured data in the form of numeric indicators, (ii) query the central knowledge repository along multiple metadata dimensions, and (iii) visualize aggregated content and metadata patterns.
Ownership	webLyzard technology
Protection	This is proprietary software of webLyzard technology.
Access rights	Access rights will be granted to the InVID participants for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.
Sharing	A customized version of this asset will be available for use by all project partners and selected external stakeholders.

IP asset	**InVID_IP_WP5_2_MultimodalAnalysisDashboard**
Type	Foreground
Description	This IP asset will be an extended version of the existing user interface of the webLyzard platform, adding a range of interactive features and the ability to display image and video content and use thumbnails to represent related stories and content clusters.

IP asset	**InVID_IP_WP5_2_MultimodalAnalysisDashboard**
Ownership	webLyzard technology
Protection	This is proprietary software of webLyzard technology.
Access rights	Access rights will be granted to the InVID participants for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.
Sharing	A customized version of this asset will be available for use by all project partners and selected external stakeholders.

IP asset	**InVID_IP_WP5_3_VisualizationComponents**
Type	Foreground
Description	This IP asset develops new (and extends existing) interactive visualization tools that will be made available in two different formats: fully integrated into the multimodal analytics dashboard (IP_WP5_IP2; all modules), and as embeddable widgets to be integrated into InVID applications (selected modules).
Ownership	webLyzard technology
Protection	This is proprietary software of webLyzard technology; specific versions of some modules will be made available under an open source license.
Access rights	Access rights will be granted to the InVID participants for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.
Sharing	A customized version of this asset will be available for use by all project partners and selected external stakeholders.

3.2.5 WP6 IP assets

IP asset	**InVID_IP_WP6_1_VerificationAppExpertise**
Type	Background
Description	Deutsche Welle brings into the project its know-how in gathering real-life journalistic requirements and turning them into functionalities of the InVID platform and its applications. Special attention will be paid on the development of an intuitive graphical user interface which is considered to be crucial for the commercial exploitation of the InVID products at the end of the project. Deutsche Welle falls back on its expertise gained in REVEAL, a project dealing with the verification of UGC.
Ownership	Deutsche Welle
Protection	Expertise of Deutsche Welle staff
Access rights	Deutsche Welle shares its know-how with the project partners in the validation activities and the development of the InVID platform and its single components.
Sharing	See above.

IP asset	**InVID_IP_WP6_2_VerificationExpertise**
Type	Background
Description	AFP brings into the project its know-how in gathering real-life journalistic working experiences and turning them into requirements and functionalities of the InVID platform and its applications. Special attention will be paid on observing and analyzing users in their verification work to really tackle the challenges facing the industry when using UGV content, using a design thinking methodology to achieve this goal. AFP falls back on its Medialab R&D unit expertise in verification.
Ownership	AFP
Protection	Expertise of AFP staff
Access	AFP shares its know-how with the project partners in the design and

IP asset	**InVID_IP_WP6_2_VerificationExpertise**
rights	development of the InVID platform and its single components, and in its evaluation with professional users.
Sharing	See above.

IP asset	**InVID_IP_WP6_3_VerificationApplication**
Type	Foreground
Description	The Verification Application will be developed within the project. It will be able to retrieve UGC from different sources and offer the user media items with basic information including license information and verification state. The user of this application will be able to select UGC items for further verification following best practice, e.g. according to the verification handbook, and invoke i) standard tools such as Google Maps, Twitter, Facebook to check place, time, source, etc. and ii) advanced InVID tools to verify changes, manipulations, or duplicates and identify rights and costs. The application will keep records of whether the validations were passed, failed or are irrelevant, and will report on the current state of the evaluation process. This will allow users up from a minimum threshold to decide under consideration of public interest, time and cost conditions to publish an item or not. The app will also offer a standby mode, where it will indicate to the user that new materials for a certain topic have been detected. In addition to its user interface, the app will provide a common application REST API. The application will support the prevailing protocols and formats to transfer the resulting playlist and the analysis state (e.g. MOS (Media Object Server) protocol, JSR Content Repositories) for integration into News Room Systems and CMS's. The Verification Application will be based on components developed within WP1 to WP5.
Ownership	Condat
Protection	This is proprietary software of Condat.
Access rights	Access rights will be granted to the InVID participants for the needs of the project. Rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral Business Agreements.
Sharing	A restricted demo service may be made publicly available.

3.2.6 WP7 IP assets

IP asset	**InVID_IP_WP7_1_UGCMobileApp**
Type	Foreground
Description	This IP asset will be created to enable users to upload videos for the showcase with regional newspapers. It will use the user base managed by the regional newspaper. The user will be asked to accept the usage terms and to allow additional data to be uploaded (geo-data, device-information etc). In a later version also back-channels to be used by the newspapers will be integrated.
Ownership	APA-IT
Protection	This is proprietary software that is going to use already existing technologies of APA-IT's Mobile Publishing Suite.
Access rights	Access rights will be granted to the local newspapers for the pilots at no costs. If needed access rights to other InVID participants will be granted although adaptations – e.g. interfaces to specific user-databases – as well as rights pertaining to joint exploitation activities will be agreed upon between the partners in separate bilateral business agreements.
Sharing	The module will be available for the pilot showcases mentioned above.

3.2.7 WP8 IP assets

IP asset	**InVID_IP_WP8_1_Communication**
Type	Joint Foreground
Description	All written and visual communication of the InVID project on its website, on social networks, in posters and flyers, made publicly available during the course of the project.
Ownership	Joint
Protection	Public dissemination.

IP asset	**InVID_IP_WP8_1_Communication**
Access rights	Granted to all.
Sharing	Public.

IP asset	**InVID_IP_WP8_2_MarketAnalysis**
Type	Joint Foreground
Description	AFP, as WP leader, and partners will build an updated market analysis of UGV content use by mainstream media to assess the needs, the industrial benefits and unique value proposition of InVID developed solutions for the mainstream media, including news agencies, online media, broadcast TVs, 24/7 televisions and their technology providers.
Ownership	Joint
Protection	Included in deliverables (see below).
Access rights	Deliverables D8.2, D8.3 and D8.4 reserved to the InVID consortium.
Sharing	Elements of this market analysis, especially the analysis of UGC video usage by mainstream media will be shared as dissemination.

4 Summary

The initial Quality and Knowledge Management Plan defined by the members of the InVID consoritum was documented in this deliverable. This plan includes the prescribed actions for assuring the quality of a set of different aspects of the project, namely the innovation management, the research activities, the software development, the preparation of the project deliverables, and the overall progress of the project according to the defined timeplan. Moreover, it involves a set of rules and agreements related to the management of scientific publications, knowledge and IP assets in the project. The latter are listed in detail, and our plan concerning their protection, access and sharing is indicated. An updated version of the Quality and Knowledge Management Plan integrating newer needs and findings of the project in relation to quality assessment and the management of the created knowledge will be described in D1.3 "Updated Data, quality and knowledge management plan", which is due in Month 21 of the project (September 2017).

Annex I: Project outcomes and measures of success

Project expected outcomes

In relation to the industrial needs and the foreseen results of the InVID project, we identify the following six technological and innovation outcomes:

Outcome R1: Toolset for video discovery and indexing. A piece of software, also accessible as Software as a Service (SaaS), enabling i) emerging news topic detection on the Social Web, ii) both automatic and user-driven pre-selection of newsworthy web videos, iii) assessment of the reputation of the video based on social network analysis and user behaviour, iv) collection of potentially reputable videos, and their indexing, temporal fragmentation and concept-based annotation for the subsequent verification phase.

Outcome R2: Toolset for video verification. A piece of software, also accessible as Software as a Service (SaaS), verifying that i) the video has not appeared in the past in a different context, ii) its location and time metadata are accurate, iii) any text-based annotation of it (e.g. in the case that the video was part of a tweet) is truthful, iv) the video file has not been manipulated (edited).

Outcome R3: Video rights management process. A process and its software implementation for i) modeling the media rights associated with UGC video, ii) facilitating the communication between the content creator and the interested media organization, iii) re-use rights negotiations, agreement and compensation settlement between the UGC owner and the media organization.

Outcome R4: Web platform for video discovery, verification and rights management. A web intelligence platform that is accessible as Software as a Service (SaaS) or Web interface and uses the above tools for providing video discovery, verification and UGC rights management capabilities to media organizations.

Outcome R5: Applications and systems for the media industry. A Verification Application that will define and implement the InVID media verification workflow developed on top of the InVID web platform. The Verification Application will be available both as a stand-alone application and as part of two complete UGV management systems that will encapsulate it, along with a mobile app enabling the collection of newsworthy media from a community of registered users.

Outcome R6: Successful dissemination and exploitation. Wide dissemination of the project results and established IPR management processes and business plans that will enable the exploitation of the project's outcomes at multiple levels (media organizations, IT system providers, and core technology providers). Preparation of market entry with products that will be based on the InVID technologies (tools, platform, and applications) will be pursued outside the boundaries of the EU-funded work, but will be prepared for before the end of the project's lifespan.

Success indicators and measures

Outcome	Success indicators and measures
R1	Average number of detected newsworthy emerging topics per day
	Coverage of web videos automatically collected for a newsworthy trending topic
	Speed-up of video pre-processing (temporal fragmentation, concept-based annotation) compared to state-of-the-art solutions
R2	Speed-up in the indexing and search of near-duplicate content compared to state-of-the-art solutions
	Improvement of recall in near-duplicate content compared to state-of-the-art
	Success rate of detecting fake videos based on contextual metadata
	Number of different possible manipulations of a video file that are detectible
	Success rate for video file manipulation detection
R3	Average time needed to get permission to reuse a UGC/V, compared to current practice as reported by the involved consortium partners dealing with this issue (AFP and DW)
	Percentage of reuse authorisations performed automatically using InVID platform, without requiring human intervention
	Number of UGC providers registered in the platform
R4	Number of UGV and related media items being indexed by the platform per day
R5	Number of video verification requests being handled in the pilots
	Increase of the video verification success rate using the InVID Verification Application, compared to current journalistic practice
	Speed up of video verification and rights clearance completion, in comparison to current journalistic practice
R6	Number of events at which InVID is disseminated
	Number of people contacted via physical meeting or Web/social media channels
	Value of creative industry market segments that products based on InVID results can cover
	Value of contracts that are secured by InVID partners for products based on InVID results, by the project's completion
	Value of contracts that are secured by InVID partners for products based on InVID results, within 5 years from project's completion

