WP9 – Impact

D9.4.2: Standardisation and Policy Report (Second Version)

Deliverable Lead: BDS
Contributing Partners: BDS, TIE, ASC, UOR, NTUA, TPVI
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Final

This document provides an update of the applicable standardisation and policy activities which the partners have used through the phases of the project so far. This information has included communication with standardisation forums and monitoring to ensure compliance of the project and results with existing standards and policy, including Spanish data protection law (LOPD) and personal data, brand and consumer protection and related ethical issues.
### Document Status

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Executive Summary

The purpose of D9.4.2 Standardisation and Policy is to deliver an updated description of the standardisation and policy activities of the project, including both business and technical standardisation aspects. Task T9.4 continues to act as a connector to standardisation initiatives and forums and, through monitoring of the project, aligns the project results with existing applicable standards. The project results of SAM will be applicable if they continue to benefit from the effective use of existing standards and provide active input to standards as well. This report describes the active communication with associations and standardisation bodies such as EIDR, NACO, MusicBiz, HbbTV and Europeana carried out in year 2 of the project. The policy regarding personal data protection and related ethical issues continue to be observed in this task and where there have been any changes, the specific updates and corrective actions and strategies will be included in the report. D9.4.2 is the second of a series of three reports to be delivered over the project.
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1 Introduction

SAM – Dynamic Social and Media Content Syndication for 2nd Screen – is a project funded by the Seventh Framework Programme of the European Commission under Grant Agreement No. 611312. It provides a content delivery platform for syndicated data to be consumed in a contextualised social way through 2nd Screen devices.

1.1 SAM Project Overview

Today’s generation of Internet-connected devices has changed the way users are interacting with media, exchanging their role from passive and unidirectional to proactive and interactive. Under this new role, users are able to rate or comment on a TV show and search for related information regarding characters, facts or personalities. They do this both with friends and wider social communities through the so called ‘2nd Screen’.

Another related innovation is ‘Content Syndication’; a field of marketing where digital content is created once and delivered to various different marketing channels (devices, social media channels, websites and stakeholders) together and so allowing efficient content control, delivery, and feedback.

However, the 2nd Screen phenomenon has grown in an unordered way. Tools are supplied by the media provider companies (e.g. as mobile or tablet apps), which limits outreach and, as a result, users are not stimulated and fed relevant contextual, syndicated information. European enterprises wishing to provide such services have limited potential to receive feedback, which in turn restricts the business intelligence that can be extracted and applied in order to profit from and enrich this market.

SAM will change this disorder by developing an advanced Social Media delivery platform based on 2nd Screen and Content Syndication within a Social Media context. This is achieved by providing open and standardised ways of characterising, discovering and syndicating media assets interactively. Users will be able to consume and prosume digital assets from different syndicated sources and different synchronised devices (e.g. connected TVs), thus creating richer and more fulfilling consumer experiences around the original media assets.

SAM’s innovation in this area means that instead of users seeking out the data, it is the data which reaches the user through the syndication approach by means of their 2nd Screen. This is based on the creation of dynamic social communities related to the user and digital asset context (e.g. profiles, preferences and connected devices). These are dynamic hangouts where people share interests, socialise and build virtual communities. SAM will enable syndication of comments, ratings, facts, recommendations and new information that will enrich and energise the community as well as enhance personalised knowledge and satisfaction.

1.2 Deliverable Purpose, Scope and Context

The purpose of D9.4.2 Standardisation and Policy is to summarise the different standardisation and policy activities currently being applied by the partners and intended for implementation during the SAM project. This document provides updated information about the relevant standards, which reflect the position of the SAM project in the current Media and Entertainment (M&E) ecosystem, business and research/technological
standards, partner perspectives, underlying enablers of interoperability and applicable standards and policy which are being followed to develop a successful system.

This document contains high-level information, providing an incremental and updated description of the liaison activity carried out so far. It shows the potential contributions of the standards and policy benefits contributed to, and gained from interacting with standardisation bodies or similar forums which inform and involve media and content provider industries and communities.

1.3 Document Status and Target Audience

This document is listed in the Description of Work (DoW) as ‘public’ since it provides an updated description of the standardisation and policy activities of the project and includes both business and technical standardisation aspects which are of importance to SAM.

Whilst the document is primarily aimed at the project partners, this public deliverable may also be useful for the wider business, academic and scientific community including other publicly funded projects, where the organisers may be interested in standardisation, policy and collaborative activities.

1.4 Abbreviations and Glossary

A definition of common terms and roles related to the realisation of SAM as well as a list of abbreviations is available in the SAM Glossary.

Further information can be found at http://wiki.socialisingaroundmedia.com/index.php/Glossary

1.5 Document Structure

This deliverable is broken down into the following sections:

- **Section 1 (Introduction):** An introduction to this deliverable including a general overview of the project, and outlines the purpose, scope, context, status, and target audience
- **Section 2 (Standardisation and Policy in SAM):** Explains the approach and plan for Standardisation and Policy
- **Section 3 (Use of Standards):** Presents the applicable standards that continue to be used during the project
- **Section 4 (Contributions to Standards):** Identifies the areas where SAM is able to make a contribution to industry standards
- **Section 5 (Policy Environment):** Presents any updates in the areas of consumer, brand and copyright protection and policy applicable to SAM
- **Section 6 (Conclusion):** Provides the conclusions of the current document
2 Standardisation and Policy in SAM

The SAM project is focused on the development of an advanced Federated Social Media Delivery platform providing an open and standardised way of defining, characterising, discovering and syndicating multi-media assets which will enable users to consume using different devices (Notebooks and smart mobile devices as 2nd Screen and Smart or Connected TV as 1st Screen) whilst at the same time become socially involved. Thus, SAM will promote a common understanding on standards for Social Media measurement and play an important role in the diffusion of new technology and ultimately contribute to growth.

The partners identified, some of the elements of current standardisation for implementation, as summarised in D9.4.1: Section 3 – Use of Standards. These standards continue to encourage and facilitate the use of valuable contextual, relevant, connected data from content providers, Social Media and more specifically 2nd Screen channels. Through use of standards the interoperability of the resulting solutions will be significantly improved allowing seamless integration, making the exchange of components and underlying infrastructure possible, thus leading to greater prospects of successful exploitation.

SAM is developing an open market for standardised entertainment metadata related to content consumption through 2nd Screen, SmartTV and smart mobile devices. In this content-based network, the assets will continue to be standardised and interrelated using applicable ID standards. This will offer consumers an opportunity to navigate through contextual content, discovering films, video, broadcast, music, books and games products and be able to buy these items contextually, right away through the supply chain efficiencies standardisation brings into the marketplace.

2.1 Approach

SAM continues to make use of existing standards to provide active input to standards on the other communicate the results and proposals by collaborating with different existing standardisation bodies. An objective of SAM is to deliver open and standardised formats for the description of media assets and a framework for their configuration and use that will be utilised by third party software companies to easily build new applications or business models. This persists through the tasks scheduled on WP2 (T2.4), WP3 (T3.3), WP4 (T4.1) and W9 (T9.4), and indicates the utilised standards contribution/application e.g. data identifiers, social media measurement standards etc.

2.2 Plan

SAM partners have established active communications with associations and standardisation bodies such as EIDR, NACO, MusicBiz, HbbTV and Europeana Data Model (EDM), which include both business and technical standardisation aspects, all with a global reach and impact. Additionally an identified intention is to provide input to standardisation activities and feeding results and know-how into further EU RTD projects, national or industrial research projects.

Each initiative has an interested SAM partner to follow up the activities and liaise with the bodies, as T9.4 operates over the three years of the project, e.g. BDS with EIDR, NACO
and MusicBiz, TPVision with HbbTV Association and NTUA with EDM, with one phase per year:

- **Period 1**: Standards exploration: The partners have identified the most significant, relevant standards and associations that may be applied to the different topics in the SAM project. This task will continue during all the project lifecycle.

- **Period 2**: Usage and liaison: Having been identified, the standards are being applied within the different aspects of the project. In addition interested partners have been interacting with the standards bodies and associations, exchanging information, questions, etc.

- **Period 3**: Possible contributions: SAM partners will seek to make contributions to the standards and association bodies by sharing experiences and knowledge gained during the project.

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BDS continues to be a major contributor of authority data to the Name Authorities Cooperative (NACO), and in addition BDS complies with the Anglo-American Cataloguing Rules, 2nd edition, (AACR2) and Resource Description and Access (RDA) standards.

TP Vision is a member of the Digital Video Broadcast consortium\(^1\) which is an industry-led confederation that is active in promoting and participating in standardisation initiatives. A possible liaison is being explored with the DVB consortium in order to synchronise and mutually support the SAM developments and achievements.

Ascora and TIE continue to disseminate information about the standards and project results of SAM in its industrial and scientific network including partners from other EU projects such as the FP7 SIMPLI-CITY project. Ascora also promotes the results in national projects such as BMBF Cloud/i/o or BLE OPDIS.

NTUA has already been in contact with Europeana Data Model (EDM) team to discuss the SAM developments for asset description which use EDM standards and also provide new extensions which may be applicable to EDM in order to support the features of social aware content delivery platforms. The discussions are ongoing and feedback is expected from the EDM team on a continuous basis. Based on this feedback, the plan in the third

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\(^1\) [http://www.dvb.org](http://www.dvb.org)
year of the project is to further adapt the asset description framework so as to be more effective and compatible with EDM, with the ultimate target being to encourage the EDM team to integrate elements and concepts of SAM in the next version of EDM.
3 Use of Standards

Whilst it is recognised that standardisation is an important element in the SAM project and much standardisation alignment will be applied throughout the technical tasks, resource implications will continue to limit liaison with standards groups.

The partners identified many of the standards that may be used in the project and the foundations for the use and sharing of any such standards and policies have been laid out. However, it is clear that this approach will be further refined as SAM matures, but by adopting an early knowledge and understanding of the applicable standards from the outset, the likelihood of a successful outcome will be increased.

In year 2, the partners confirmed and, where appropriate, updated the applicable standards tables based on their importance to SAM, the M&E ecosystem and its different sectors. These are summarised below:

3.1 Content Representation

<table>
<thead>
<tr>
<th>Standardisation Applicable</th>
<th>Relevance to SAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Article Number (EAN)</td>
<td>An EAN-13 barcode is a 13-digit (12 data and 1 check) barcoding standard which is defined by the standards organisation GS1. (Recently renamed International Article Number®). This will enable efficiencies in the SAM Marketplace</td>
</tr>
<tr>
<td>Entertainment Identifier Registry (EIDR)</td>
<td>EIDR is a universal Digital Object Identifier (DOI) that uniquely identifies a digital audio-visual object in the entertainment ecosystem</td>
</tr>
<tr>
<td>The International Standard Book Number (ISBN)</td>
<td>ISBN is a unique international identifier for monographic publications. Published as an international standard (ISO 2108) and in wide use since the 1970s it has been adopted in over 160 countries. The use of ISBNs is essential for SAM content within the book supply chain.</td>
</tr>
<tr>
<td>Machine-Readable Cataloguing (MARC)</td>
<td>MARC standards are a set of digital formats for the description of items catalogued by libraries, such as books. It was developed at the US Library of Congress to create records that can be used by computers, and to share those records among libraries. This is especially relevant for links to libraries within Europeana.</td>
</tr>
<tr>
<td>International Standard Name Identifier (ISNI)</td>
<td>ISNI enables the public identities of parties involved in media content industries to be uniquely identified so that they can be clearly disambiguated where otherwise there might be doubt.</td>
</tr>
<tr>
<td>Name Authority Cooperative Program (NACO)</td>
<td>The underlying principle of the NACO Program is a common set of standards and guidelines for name authority records in order to ensure integrity of identification of creators of copyrighted materials which is essential when creating syndicated data for end users.</td>
</tr>
</tbody>
</table>

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2 http://www.gs1.org
3 http://eidr.org
4 http://www.editeur.org/8/ONIX
5 https://www.isbn-international.org
6 http://www.loc.gov/marc
7 http://www.isni.org
8 http://www.loc.gov/aba/pcc/naco
| International Standard Recording Code (ISRC) | ISRC is an international standard code for uniquely identifying sound recordings and music video recordings which will be available via SAM. |
| British Board of Film Classification (BBFC) | The BBFC is a trusted guide to media content and is the UK’s regulator of film and video and offers protection for the consumer. |
| Games Rating Authority (GRA) | GRA is a trading name for the game rating activities of the Video Standards Council. Prior to 1994 there was no system available for use in rating video games, however games that contained extreme material, the equivalent of an 18 certification rating, were categorised by the BBFC using film rating methodology. In 1994 the games industry introduced a rating system, known as the ELSPA System, which in turn was superseded by the PEGI system in 2003. The PEGI age rating system was established to help European parents make informed decisions on buying computer games and replaced a number of national classification systems with a single structure now used throughout most of Europe. |
| MPEG MXF - IMX 50 | Material eXchange Format (MXF) is a container format for professional digital video and audio media defined by a set of SMPTE standards used by broadcasters. |
| H.264.MP4 | H.264 or MPEG-4 Part 10, Advanced Video Coding (MPEG-4 AVC) is a video compression format that is currently one of the most commonly used formats for the recording, compression, and distribution of video content which may be deployed via SAM. |
| EDM, Europeana Data Model | Europeana Data Model (EDM) is a data model that brings meaningful links to cultural heritage data including media representation, digital rights, etc. |
| W3C Activity Streams 2.0 | The W3C Activity Streams 2.0 draft is a service-independent representation format for social media and communication activities that can be represented using a number of formalisms including JSON and N3. The Activity Streams draft format is used as the data representation format for activities in SAM dynamic communities. |

Figure 2: Media Representation related Standards

### 3.2 User Interaction

<table>
<thead>
<tr>
<th>Standardisation Applicable</th>
<th>Relevance to SAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>HbbTV (2.0)</td>
<td>The HbbTV specification enables the delivery and presentation of interactive services to TV sets and set-top boxes using both conventional TV broadcast and IP-based broadband which will allow interoperability with SAM.</td>
</tr>
<tr>
<td>HTML5</td>
<td>HTML5 generally refers to a collection of technologies, including HTML, CSS and JavaScript which are used for the client side implementation of web applications. These applications run in a web browser, and can be deployed to any device with a web browser – examples include PCs, tablets, smart phones, televisions and set top boxes. HTML5 applications are highly portable between devices to be used within SAM, although adaptations may be needed for different types of user interface.</td>
</tr>
</tbody>
</table>

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9 http://isrc.ifpi.org/en
10 http://www.bbfc.co.uk
11 http://www.gamesratingauthority.org/pegi/
13 http://www.pegi.info/en/index/
14 http://pro.europeana.eu/edm-documentation
15 https://www.hbbtv.org
16 http://www.w3.org/TR/html5
3.3 Media Analytics

The IPR Social Media Measurement Standards Committee, dubbed “the Conclave”, is a coalition of B2B and B2C companies, PR and Social Media Agencies, and Industry associations that work with paid, owned and earned Social Media, aiming at establishing standard definitions and best practices for Social Media. In October 2011, the Conclave moved towards the standardisation in several areas of the Social Media, as shown fully in D9.4.1, Figure 4.

Having considered the options the SAM partners have committed to follow the Social Media Measurement Standards Committee definitions and best practices for Social Media data measuring.
4 Contributions to Standards

The importance of accurate and consistent metadata is paramount to facilitate the distribution of cultural products in the industry supply chain. In order to aggregate data in a meaningful way it is important that SAM continues to promote the use of standards for media assets, reference models, cataloguing rules, vocabularies, authority files, and data exchange specifications.

4.1 Media Representation

Media Representation Standards are critical to the M&E supply chain, because they enable various parties to exchange information with ease. There are a large number of inventory items and many manifestations of the same work, so identifying the correct item is extremely important as illustrated by the examples which follow.

4.1.1 Information IDs

An issue which is important for public bodies such as libraries, schools, museums, etc. is the obligation to provide an audit trail to ensure that public money is spent appropriately. Hence, identifying exactly what was bought, the physical description of the item and the price has always been a vital requirement and so SAM standards will ensure that it is able to engage with institutions interacting with the Europeana Data Model.

With over 2,500 institutions currently contributing to its digitised cultural heritage content, Europeana is an ever-growing network of connected cultural institutions (including libraries, museums and archives) and commercial organisations (including software developers) working together to preserve European shared heritage through the digitisation and digital curation of millions of images, texts, objects, audio and video resources.\(^{17}\)

Utilising library standard metadata within SAM will ensure a data-rich resource, which is compatible with other standards and schema, as contributors to the platform provide digitised content and metadata. SAM may attract many aggregators of content and the opportunities presented through Linked Open Data developments can increase traffic to and from contributing cultural organisations.\(^{18}\)

The provenance of the data embedded in EDM is important to the aggregators, contributors and users of Europeana. EDM attempts “to transcend the respective perspectives of the various communities constituting Europeana, such as museums, archives, audio-visual collections and libraries... adopting an open, cross-domain Semantic web-based framework that can accommodate particular community standards...”.\(^{19}\) The new cataloguing standard, Resource Description and Access (RDA), is one such standard that can be accommodated in Europeana’s data model, which also supports schema including MARC21 and Dublin Core.

\(^{17}\) ibid.
BDS was one of the first adopters of RDA and continues to invest time and effort to ensure that the SAM project is able to benefit from its expertise, experience and industry knowledge. RDA adds value to bibliographic records through its interoperability and flexibility. It is important to note that RDA is a content standard – based on the theoretical Functional Requirements for Bibliographic Records (FRBR) and Functional Requirements for Authority Data (FRAD) models. It does not specify how to display or encode information.\textsuperscript{20} RDA is designed for use in today’s digital environment and “can be used for the description of both traditional and non-traditional resources, analogue and digital, within and beyond the library.”\textsuperscript{21} RDA is an international standard that enables interoperability and compatibility amongst libraries, institutions and commercial metadata providers across the globe.

The conceptual models FRBR and FRAD consider the identification of specific entities and the resulting relationships between these entities. The FRBR Group 1 entities – Work, Expression, Manifestation, and Item (WEMI) – enable the creation of metadata at the ‘idea-level’ (Work), as well as the ‘physical-level’ (Item).\textsuperscript{22} FRAD’s model focuses on the entities of Person, Corporate Body, Family and Work and the relationships between these and the entities identified in FRBR. Embedding these relationships within the content of bibliographic records ensures end users are able to navigate complex relationships in order to meet their search criteria (Find, Identify, Select, Obtain).\textsuperscript{23}

The SAM Asset Description “refers to the characterisation of the media content... at both the meta-level... and the content level”\textsuperscript{24} and the proposed schema links to the WEMI concepts embedded in RDA and the controlled vocabulary used to describe content, media and carrier types. The structure of the SAM Asset Description Schema is intrinsically linked to the FRBR WEMI model and the identification and transcription of relationships through linked data.\textsuperscript{25}

The granularity of RDA adds value to bibliographic records and enables the linking of abstract ideas to physical items. Relationships are also established by incorporating other industry standards such as the Name Authority Cooperative Program (NACO). NACO, ISNI, VIAF and other authority control identifiers are now made available on Wikipedia pages, linking authority data about individual artists, authors, musicians, actors, etc.\textsuperscript{26} Linked data is the key concept in creating syndicated data for end users.

BDS has been working with The Music Business Association (MusicBiz) to create a guide\textsuperscript{27} to assist in the harmonising of standards across digital music retailers with respect to how music is listed, ingested, and managed by establishing a common set of metadata guidelines. The guide is designed to provide all music industry stakeholders the opportunity to work from common naming conventions and data entry standards to help


\textsuperscript{23} ibid.


\textsuperscript{25} ibid.


avoid past pitfalls and improve on data quality on a going-forward basis. West10 was instrumental in advising on name authority best practice for defining instances of artist name disambiguation like, for example, John Williams (Composer) and John Williams (Guitarist) to enable content distributors to communicate the exact display text for the artists associated with the release.

BDS has initiated the use of an EIDR unique identifier for all television and movie assets held in its database, which is especially important for SAM as EIDR is an identifier in the EBUCore metadata specification, setting the stage for efficient, streamlined workflows to support the new world of entertainment everywhere, anytime, on any device.

Furthermore, as EIDR is based on the Digital Object Identifier (DOI), ISO standard (ISO 26324), it is applicable in a wide variety of environments and content supply chains, and is relevant to SAM to both the M&E ecosystem which includes VOD, OTT, cable, on demand TV, TV Everywhere, retail digital media etc., as well as the public sector education, film and TV archives, scholarly research, and digital cultural patrimony projects. Linked Heritage is producing a mapping from EIDR to LIDO as part of its charter to co-ordinate standards and technologies to increase the quantity and quality of metadata available to Europeana. This, in turn, will make it possible to expose descriptive metadata for culturally relevant products alongside links to purchase them from retailers. The range of EIDR members is illustrated in Figure 4 below.

SAM will gain value from the inclusion of EIDR identifiers in its content within both the cultural heritage and commercial sectors, by improving its ability to match assets and metadata from different databases, service providers, or metadata suppliers, increasing efficiencies in the flow of data, tracking of assets, lowering risks of misidentification caused by duplication and lack of ID uniqueness and allowing simplified universal search and discovery.
4.1.2 Asset Representation

Media Assets are among the main entities of the SAM Platform with the asset related functionality playing a key role in the realisation of the overall SAM features and vision. This functionality refers to various interdependent processes across the asset lifecycle, from importing media content into SAM and its semantic annotation, to the creation of asset compositions and their social aware syndication to end users. This requires a robust, semantically and social enabled, dynamic and, at the same time, efficient schema for the description and representation of media assets. In addition, this schema needs to be extendable and compliant with the popular and widely adopted approaches available nowadays in order to simplify the asset importing process. This will thereby allow for effective exploitation of assets through syndication of the contents in the SAM Marketplace and to link to entities such as Europeana and Linked Heritage.

Europeana’s Strategy 2015-2020 boldly states its aim to “become the largest trusted repository of cultural heritage in Europe as research tells us this is what users want – unobstructed access to credible, quality material". To date, the aggregated content reaches over 30 million entries but this only constitutes 10% of European cultural heritage. Of that 10% “only 34% is currently available online and barely 3% of that works for real
creative re-use (e.g. in social media, via Application Programming Interfaces (APIs), for mash-ups, etc.)\(^{29}\)

The SAM approach is to build on top of well-established media representation standards, which may be extended to accommodate the specific functional and technical requirements of the SAM environment. Analysis of state-of-the-art in this domain concluded that the main specification candidate for the foundation of the asset description in SAM should be the Europeana Data Model (EDM) together with ontologies from schema.org. According to Europeana, EDM is “a more developed data model that brings more meaningful links to Europe’s cultural heritage data”. Data from partners or external information resources with references to persons, places, subjects, etc., will be able to connect to other initiatives and institutions. This will result in sharing enriched content, adding to it and thereby generating more content in ways that no single provider could achieve alone, which is one of SAM’s foundation principles. In addition, one of the key features EDM is the fact that it supports most of the well-known and established models as namespaces, such as Dublin Core, FOAF, OWL and RDF. The latter is of high importance for SAM since it allows for high flexibility on the model and also ensures compliance with other models and specifications.

In the framework of SAM however, a new asset description schema has been proposed to address the specific requirements of the platform and the stakeholders. The schema reuses elements from EDM, however new extensions have been defined:

- **Characterisation and Semantic Annotation**: SAM supports automated characterisation of assets with semantic information in order to enhance, among other processes, the asset discovery and recommendation. In that sense, the SAM Asset Description incorporates semantic information and the respective placeholders are introduced in the model.

- **Social Awareness**: The model incorporates information from social networks and user generated content from dynamic communities to improve the user experience, one of the keystones of SAM.

- **Asset Linking and Composition of Assets**: SAM supports the linking of assets and the creation of asset compositions to be merchandised or syndicated. In SAM, the linking process can be performed in a fashion which will be aware of the asset timeline so that the linked data can be made available at specific times to avoid overloading the user with information and to also improve engagement. Therefore the functionality of ‘linking’ demands specific requirements to asset description specification which are not currently addressed by EDM and will be provided as EDM extensions in the frame of SAM.

- **Asset Syndication and Presentation**: For the effective syndication and presentation of assets and asset compositions, the SAM Platform defines the appropriate and optimal methods to communicate the respective media content to the end users. This mainly refers to the widgets, themes and media formats required for each asset type or, more specifically, for any type of linked information (media, semantic or social) and all of these features are included in the Asset Description model.

The SAM Asset Description model provides new features which can be considered as potential extensions to EDM. These extensions address the aforementioned requirements

\(^{29}\) ibid.
in order to facilitate the SAM vision; however they could also be exploited beyond the project. To this direction, the outcomes of Asset Description are already communicated to the Europeana team, and there are ongoing discussions between SAM partners and EDM for providing feedback to the SAM implementation and also investigations into the potential use of elements or concepts of the approach in EDM.

4.2 User Interaction

SAM continues to review and analyse the HbbTV v2 specification to identify how HbbTV v2 terminals fit in the SAM ecosystem and if further additions are needed in order to properly support SAM applications and use cases. The early results of the interaction with the HbbTV Association have provided the SAM consortium with technical details that have been embedded into the SAM Technical Specification for easier alignment (e.g. 1st and 2nd Screen interaction scheme).

The HbbTV 2.0 companion screen features that SAM builds on were demonstrated by several companies at the IBC 2015 exhibition. The HbbTV Association announced that it had placed the contract for the test suite for HbbTV 2.0 receivers (including the companion screen features). TP Vision was very involved in this activity including supplier identification, supplier selection, finalising and awarding contracts.

4.3 Security System Implementation

As is evident in other sections of this deliverable, SAM applies existing standards in many parts of the overall SAM system implementation, including in particular Web Services for the inter-component communication. In terms of opportunities and needs for contributions to standards, the area of data and service access authorisation has been identified as a suitable and useful area in which contributions can be made by the SAM Project partners. These opportunities pertain in particular to the use and extension of OAuth 2.0 and OpenID Connect authentication in combination with access control and authorisation.

The University of Reading has been investigating options concerning access control and authorisation based on OAuth 2.0. The particular interest of the University of Reading has been to improve the applicability, configurability and flexibility of OAuth 2.0-based authorisation systems so that complex authorisation scenarios such as ones that may occur in SAM can be implemented.

Complex scenarios require generalised managed authorisation at a higher level of abstraction than the ad-hoc authorisation that is commonly supported by OAuth 2.0 (e.g. supporting complex authorisation scenarios is the goal of the User-Managed Access (UMA) Kantara Initiative work group30. This work group produces draft and final specifications for delegated and interoperable access control and authorisation in the form of the UMA specifications UMA Core, OAuth Resource Set Registration and UMA Claim Profiles. At the time of writing, version 1.0.1 of the UMA specifications has been released for public review as a draft specification.

As part of their work with and on standardisation in SAM, the University of Reading intends to:

30 Kantara Work Group User Managed Access
• Apply UMA in a demonstration use case with a scope depending on the release date and status of the UMA specifications; envisioned for Prototype 2 or 3 release
• Identify requirements and solutions that can be proposed for updates to the UMA specifications and/or be provided to the work group as best practices to be promoted
• Provide the identified requirements and solutions to the GLUU open source identity management server community through their feedback processes

The University of Reading had originally planned to apply for academic membership to the Kantara UMA work group that is concerned with the preparation and release of the UMA specifications. In view of the efforts available for this activity it has been decided not to proceed with this application, because the internal and external processes involved in this would consume the majority of the allocated effort without having generated any tangible benefit apart from being listed as a member.

The University of Reading has been using and providing feedback to the developers of the GLUU open source identity management server system, who are a member of the UMA Kantara working group. The University of Reading will provide feedback and suggestions for improvement to the GLUU server team, who currently provide the de-facto reference implementation of the UMA standard during the third reporting period.

4.4 Social Media Content Representation

SAM uses specifications that have been initially developed as part of the OpenSocial specification and that are currently being developed further by a W3C working group on the representation of Social Media content and activities.

The consortium believes that the extensions that have been created in particular for the W3C Activity Stream draft specification for use with the SAM program may be beneficial for other parties who may, in the future, try to achieve goals that are similar to the ones of the SAM Social Media multiscreen integration. In particular, the integration of Social Media content relative to continuous media content and the integration of group activity features may be useful to future users of the W3C Activity Stream API.

To this end, the University of Reading will formally describe the extensions made for the two purposes described above and will publish the specifications on the SAM Wikipedia page. Once the final versions of the extensions have been published, the University of Reading will get in contact with the W3C working group concerned with the Activity Stream API to introduce the extensions and propose that they be referenced from the W3C working groups’ documentation and/or integrated into future draft specification updates. This is expected to be carried out after the completion of the technical work in the final year of the project, as by then the final version of the Activity Stream format extensions used in SAM will have been implemented.
5 Policy Environment

SAM will continue to actively participate in the activities organised at programme level relating to the ICT Converging Media and Content area. The objective is providing input towards common activities and receiving feedback (e.g. from clusters and co-ordination groups), offering advice and guidance and receiving information relating to ICT programme implementation, standards, policy and regulatory activities, national or international initiatives, etc.

The project will primarily process information on the partners’ products and company information and there are no plans to handle personal data (whether identified by name or not) of the partners, however any the information related to individuals will be managed after explicit consensus and in compliance with the European and national legislation of the countries of interest. The policy regarding personal data protection and related ethical issues is being observed at all times, and should any changes occur, the specific updates and corrective actions and strategies will be reported in the yearly reports.

The SAM Project continues to interact with different ETPs through the Collaboration task T9.5 and will provide relevant inputs about policy and collaborate with other projects in the work programme through this type of interaction - e.g. the mini-cluster activity.

5.1 Consumer Protection

As the SAM Platform will interact with the social networks, this creates the necessity for mechanisms that evaluate and categorise the content in order to avoid inappropriate language, spam and malicious content to preserve consumer integrity. Clearly the most vulnerable groups of users are children and adolescents (consumers under 18-years-old). The LSE report “Risks and safety on the internet”[31] identifies general online risks for European children as: pornography, bullying, receiving sexual messages, contact with people not known face-to-face, off-line meetings with online contacts, potentially harmful user-generated content and personal data misuse.

Where SAM connects with media distribution systems such as TV, video or cinema, children will need to be protected from online access to media content, which may not be appropriate for their age and learning potential. General protection from inappropriate content is achieved with media age-rating and content classification systems, which are provided by national organisations, media publishers or independent bodies (e.g. the British Board of Film Classification (BBFC)). Longform video items such as films and movies usually contain age-rating information for parents/guardians. Closed on-demand digital media distribution systems working with SAM will be required to provide parental control features where certain content has to be unlocked by parents/guardians with a PIN.

The content providers are accountable for ensuring greater availability of age-appropriate positive content for children and, in this context, a complete Consumer Protection Policy not only provides the right mechanisms for the delivery of the appropriate content but also includes the responsibility for the parental awareness of risks and online safety.

The aforementioned techniques and practices constitute the policy framework towards the consumer protection and, more specifically, the protection of younger people.

5.2 Brand and Copyright Protection

The term Brand and Consumer Integrity refers, in one respect, to the right of owners to protect their brands and reputation from unauthorised use and, in another respect, to the safeguard of customers against inappropriate content.

Brand and Consumer Protection is an issue of great importance in the context of SAM. Both the content/broadcast providers and companies that publish information in SAM will wish to protect their brand image and reputation. Moreover, end users wish to avoid random, non-verified information or comments coming from prosumers.

In 2000, the E-Commerce Directive\(^{32}\) was adopted, setting up an Internal Market framework for electronic commerce. The objective is to provide legal certainty for business consumers by establishing harmonised rules on issues such as the transparency and information requirements for online service providers, commercial communications, electronic contracts and limitations of legal liability of intermediary service providers.

Of major importance for SAM, as a platform which allows users to find content created by other people, is Intellectual Property Rights (IPR). The IPR refers to legally recognised exclusive rights to creations of the mind. Common types of IPR include copyright, trademarks, patents, industrial design rights, and, in some jurisdictions, trade secrets. The IPR task is critical as many legal issues may arise from not taking into consideration all of the obligatory limitations. In many cases, the developments of tools that deal with the IPR issues are out of the scope of the various applications that syndicate content. For this reason, the applications providers should be protected by addressing these issues in the Terms and Conditions section, so as to make clear their approach regarding the ownership, the storage and uploading of the content and the rights of the end users.

5.3 Ethics Policy and Data Protection for School Participation

The participation of children during the validation stages of SAM creates some special ethical issues regarding privacy and data anonymisation. These specific aspects are described in detail in the (DoW) Section B4.1 and are being followed throughout the project.

As a general approach to these ethical issues, the position of the SAM Project and its individual partners will respect the fundamental principles associated with involving children, among others, respect, risk minimisation, UN Convention on the Rights of the Child, informed consent, etc. as described in the DoW Section B4.1, including the recognition of these ethical issues and how they are addressed in SAM.

Additionally, the following aspects are described in the DoW:

- Identification of aspects of the research that need to be addressed
- Justification of the procedures and the need to involve children
- Informed Consent and Assent
- Protection
- Description of the participation of children in the validation activity
- Contents of explanatory print-out to be circulated with the consent template
- Draft consent forms for the schools

\(^{32}\) [http://ec.europa.eu/internal_market/e-commerce/directive/index_en.htm](http://ec.europa.eu/internal_market/e-commerce/directive/index_en.htm)
Whilst the validation sessions will be part of a didactic experience that is not far away from what the students usually do at the schools, before the execution of the activity, specific requirements are to be taken into account:

- **Protection of vulnerable participants:** Appropriate safeguards need to be in place before a user evaluation or other experiment involving children is necessary. It must be ensured that all activities are conducted according to the relevant legal framework, including any necessary preparatory activities such as prior notification of authorities where needed and planning and completion of the correct informed consent procedures involving both the pupils and their legal guardians (e.g., parents or other responsible legal guardians).

- **Availability of a suitable system environment for evaluation:** A functioning and suitably prepared SAM Platform must be available so that participants can use a 2nd Screen experience and can also interact via the social network features of the SAM Platform. At the same time, the protection of vulnerable participants requires the environment to be completely controlled so that no unauthorized content is proposed to participating pupils.

- **LOPD Consultation:** As in any other school activity (e.g. sports or travel) Ley Organica de Proteccion de Datos (LOPD) manager responsible will be consulted to establish the appropriate terms of the children’s guardians consent e.g. it is not just about privacy of data, but also consent reflecting videos or pictures used in the experience.

- **Anonymisation of profiles:** During execution of the validation process all of the procedures of data capture, results storage, aggregated data and resulting treatment, the participants will be allocated random anonymized profiles to ensure that the data is unidentifiable.

The personal data treatment will be reduced to the managing of the consent forms. These forms will be sent and received by the personnel of the schools, and will be managed using the mechanism that the schools have already in place for the management of these types of forms following the LOPD (Spanish law 15/1999, December 13th of Personal Data Protection). These consent forms will be sent in the official languages of the Valencian Community (see templates in DoW): Spanish and Valencian.

The consent forms will inform those with legal responsibility for the participating children about the legal framework to be used during the experience. The forms contain the officially required phrase “The data of this consent form will be managed following the requirements described by the LOPD (Organic Law 5/1999, of September 13th of Personal Data Protection). The participation in this initiative does not imply the transfer of any kind of personal data to the partners of the SAM Project.”

At year 2, these aspects and principles are still valid and observed in the SAM Project and no updates or further considerations have been introduced. The Data Protection plan and LOPD compliance plans have been revealed to the schools’ directors and pedagogic boards and no problems have been raised. Theses aspects have been monitored through the periodic meetings scheduled between the boards of the schools and the SAM representative (TIE). The participant schools have updated their LOPD registry in order to cope with the different activities to be performed in the school during the academic year 2015-2016, involving actively their LOPD manager (usually an external consultant) in the planned activities.
6 Conclusion

This deliverable provides a summary of the work carried out within the framework of the Standardisation and Policy Plan for the SAM project.

The project’s use of standards has been monitored and discussed and there has been a clear identification and prioritisation of the standards to be utilised. In addition, the partners have acquired an understanding of how the project not only gains tangible benefit from the use of standards during its development, but also increases the chance for future exploitation and sustainability.

Standardisation remains an important element in the project, as exploitable results will only be applicable through the effective use of existing standards and potential active input to standards bodies as well. It has been recognised that specific components of the project can be channelled to the standardisation process such as the Asset Description of task T5.1 and Content Syndication and Media Enrichment in task T8.2 by establishing an active communication with associations and standardisation bodies such as EIDR, NACO, MusicBiz, EDM, CEN and W3C groupings. The policy regarding personal data protection and related ethical issues will continue to be observed in this task, and if there are any changes, the specific updates and corrective actions and strategies will be included in the yearly reports.

Several factors will play a role in the assessment of the success of the SAM Project’s business objectives and as the landscape shifts over the course of the project, there may be changes and technological advances and new concepts that may need to be appended to its approach. The SAM Project will therefore constantly monitor developments in the marketplace standards, delivery, technical, legal and political change, and factor them into the project planning. The results will be reported in the final deliverable D9.4.3.