



Machine-readable and interoperable
age classification labels in Europe
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Implementation Strategy Report
Pan European Game Information PEGI SA

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Introduction

This report aims to examine the implementation strategy that can be followed to implement the MIRACLE data model in the specific PEGI context and its database structures. The implementation will be executed following this careful assessment. The experiences made during implementation will be evaluated, analysed and documented in a further “Implementation report”.

First the report will outline from a more holistic angle how the PEGI system was established and how it continuously developed in a changing political context. This is necessary because the subsequent review processes that aimed to adapt the system to address societal concerns have had an impact on the way PEGI’s classification of content is processed and communicated to consumers. Then, from a more technical perspective, the functioning of the rating processes and the structure of their database architectures will be explained. Finally, the strategic options to implement the MIRACLE data-model in this back-end architecture will be scrutinized while presenting a scenario and timeline for implementation.

1. What is PEGI?

PEGI is a system of voluntary self-regulation promoting the safe use of videogames. It is the first ever pan-European age rating scheme. It has been operating in Europe since April 2003 and provides the public (particularly parents) with an indication of age ranges for which an interactive software product is suitable. The system’s efficiency is based on its ability to provide the consumer, at the time of purchase, with appropriate information and advice regarding the content and age suitability of a product according to criteria developed and assessed by experts.

The PEGI system applies to all interactive software, videogames, computer games, etc., - whatever the format or platform - sold or distributed in the European Economic Area (EEA) by any company subscribing to the standards. The European Union institutions, together with the vast majority of governments in the 28 member states and the EEA, fully support the project. Today the PEGI system is used in more than 35 European countries.

The PEGI System is based on a code of conduct, i.e. a set of rules every interactive software publisher using the PEGI System contractually commits to uphold. The code deals with the age labelling, promotion and advertising of interactive products. It reflects the interactive software industry’s commitment to provide information to the public in a responsible manner so as to facilitate informed choice.

2. Establishment, development and the political context

1. *The start of a new European project*

Between May 2001 and May 2002, a working group reflecting a cross-section of classification experts met in different European locations to discuss the feasibility of establishing pan-European age rating standards. The initiative was taken in response to an emerging political debate about the need for better consumer protection through age labelling of video games. Following high-level conferences organised by the Council Presidency on this topic a Resolution of the European Council was adopted in 2002.

Work progressed well and the project developed apace. Part of the process entailed examining a sample of 100 games in both the context of existing national rating schemes and the single pan-European model contemplated. The relevant subcommittee found that the results coming out of the existing systems and those generated by the planned system were entirely consistent. They retained the following criteria to underpin the assessment of age classifications:

- Violence
- Sex/Nudity
- Discrimination
- Drugs
- Fear
- Language (bad and sexual)
- Gambling

Within each group of criteria, degrees of severity were set so as to determine the appropriate age suitability of an age category. Each criterion was placed in the appropriate category after careful consideration of the following factors:

- Appropriateness of content for the player.
- Current positioning within existing systems throughout Europe.
- Acceptability across Europe.

In the classification matrix that thus has emerged, the lowest end of each age bracket was chosen as the indicator. Under the PEGI system there are now five age-rating levels: 3+, 7+, 12+, 16+ and 18+. Content descriptors were developed and used in conjunction with age rating logos to explain the main reason(s) for attributing a particular age rating.

An administrator that could provide sufficient expertise in management of such a system was found in the Netherlands Institute for the Classification of Audiovisual Media (NICAM), the Dutch rating body for TV and DVD content. As a high concentration of videogame publishers are found in the UK, the Video Standards Council (VSC) was chosen as its agent there. After finalisation of all relevant legal, financial and organisational arrangements the PEGI systems was launched and inaugurated by Commissioner Viviane Reding in April 2003.

2. Review and update

In the advent of the Commission's Content online consultation process, an industry working group, with funding of the European Commission, started developing PEGI Online, which was launched in May 2007. PEGI Online imposes new standards for online games, including among other things, the obligation to keep websites free of illegal and offensive user-created content and undesirable links, as well as the obligation to maintain an effective protection of privacy and grief reporting.

In 2008, the European Commission published a [Communication on the protection of minors in respect of the use of video games](#) which was based on a survey among the member states. In 2009, the European Parliament issued a [Resolution](#) with the same name. Both documents advocate strong support for PEGI and call for further improvements. This initiated a thorough review on the way PEGI looks and operates, known under the name PEGI 2.0.

The PEGI 2.0 enhancements aimed to improve PEGI's robustness, clarity of information and support among all stakeholders. It included the establishment of PEGI SA as a Belgian not-for-profit association, the organization of a biennial PEGI stakeholder congress, the use of new colored labels, compliance monitoring and the provision of extended Consumer Advice on the PEGI website. In addition, a PEGI retail code was adopted and included in the membership contracts while signatories were recommended to refer to it into their 'terms and conditions of sale' with the retailer.

At the end of 2011, Commissioner Kroes launched the [CEO Coalition](#), bringing CEO's of 30 large ICT companies around the table to reflect on concrete actions around 5 objectives. One of them is to ensure a wider use of content classification whereby members agreed to build on existing initiatives while examining areas that are not covered by current classification systems and new technological developments such as machine-readability. As an observer, PEGI was allowed to participate in all the CEO Coalition's meetings.

A few months later, the European Commission published its "[European Strategy for a Better Internet for Kids](#)" which calls for the establishment of a "consistent EU-wide approach to age rating and content classification applicable across services for a variety of content/services (including online games, apps and educational and other cultural content) while building on the success of existing initiatives such as PEGI". It also recommends to look into how these systems could be made interpretable by parental controls and how innovative solutions could be explored.¹

In parallel with these important political developments, "PEGI for APPS", a rating procedure specifically designed for small, digitally acquired software applications was in development. It was designed to cope with a very high volume of ratings required and the need for quick turnover time to match the flexibility of the digital distribution model. It avoids that the

¹ See page 12 of the Strategy

release of a game is delayed but ensures that correct ratings are given. In case an improper rating is given, the game can immediately be relabeled. PEGI for Apps uses the same set of icons and the same criteria to determine the rating of a game, but adds new feature descriptors that inform a consumer about certain types of functionality in an app. It was launched in 2012 and is used by Microsoft on Windows 8 and Windows Phone platforms.

Although app platforms still have local storefronts for customers it soon became clear that the publishers are in need of a one-stop-shop to get all age classifications for their products in one streamlined process. Therefore, an international working group, including rating boards from Europe, US, Australia, Brazil and others, is working on a global solution under the name of IARC (International Age Rating Coalition). IARC combines the criteria of the different rating boards across the globe into one big flowchart process in order to produce classifications for all participating regions at the same time. Ratings for different regions may still vary depending on cultural differences, but the system provides a publisher with a single, robust and global solution. The IARC program has completed a first implementation phase with a full integration in the Mozilla app store.

3. Technical background

1. The rating procedure

Game publishers that wish to have their products classified by PEGI need to enter into a contractual relationship with the PEGI organisation. In order to do so a formal agreement is signed which details the rights and obligations of both parties and includes the provisions of the PEGI Code of Conduct.

Publishers must then designate specific staff members (“coders”) who, prior to release of a product, are able to complete an online assessment form regarding the possible presence of unsuitable content and can certify these declarations on behalf of their company. Once the corresponding rating invoice has been paid, the administrator systematically screens the whole content of the game. If all is correct, he will issue a license authorizing the use of one of the age labels with the related content descriptor(s) for this game title.

PEGI for Apps and IARC apply a different workflow as it is designed to be intuitive and easy to use. Submitting games will only require a very short time. Games with barely or no inappropriate content for children are classified at once. Only as the amount and diversity of potentially inappropriate content increases, a few more questions need to be answered. The license generated by the system can immediately be downloaded by the developer. Both systems use a post-release audit system to verify ratings of games. In case an improper rating is given, the game can immediately be relabeled.

2. The software and database architecture

The rating system as a whole consists of two independent components, an application core that administers all data (databases and interfaces) and a presentational layer which enables the use of data in different scenarios (public, private and business modules). Both components communicate via a secure link consisting of secure server configurations and maintenance on separate servers. Standardized software architecture enables the application core to have all dynamic data ready as well as interfaces for managing and using the data.

In the private module, a user management system secures the access to the system as a whole. With the help of a Rating Wizard all necessary data are collected and saved in the master database where they can be provided for administration by the coders of the companies.

All data supposed to be shown in the public module are taken out of the private module and displayed in a separate database for a multilingual research under www.pegi.info. In order to administer all search results of one session, they will be saved in a temporary database. Because of the consistent separation of the application core and the presentation layer it is possible to create additional representations of data or develop new services for the end customer.

Finally, the business module is an addition to the private module and provides automated billing services for the rating process.

4. The implementation strategy

Before we can demonstrate how we intend to implement the MIRACLE specification into PEGI's classification context we need to explain first which classification data are currently processed and how they are structured. Then, we will analyze how and under which conditions these data are made available to internal and external parties. Finally, the implementation of the MIRACLE model will be presented in a step by step process based on these existing data-exchange scenarios.

1. PEGI's classification data

PEGI classification data take account of many different parameters which are stored in the several databases. The main rating information is stored in the master database which is comprised of many data fields in following categories:

- Product ID, Game title
- Release date
- Game publisher ID, game publisher
- Coder's name and email address

- Genre
- Game platform
- Invoice number
- Rating type: regular/online game, fast/normal track, new/additional/local rating
- Date of re-rating
- Stage in the rating process and corresponding date: rated, submitted, awaiting payment, materials received, payment received, finalized, retail copy received
- PEGI Online compliant?
- Age category: 3, 7, 12, 16, 18
- Descriptors: Violence, sex, drugs, fear, discrimination, bad language, gambling, online gameplay
- Applicable countries

The PEGI database covers all games so far classified under the PEGI system, which has been operating since 03/01/2003, including some games that were previously been rated under the ELSPA and/or SELL system and were re-rated by PEGI. The total number of game ratings for which classification data is available exceeds 21.000.

2. Data export methodologies

Four methods to query the rating information from this master database can be distinguished. Each of them is available for different types of audiences.

1. Rating information can be manually searched via the search engines on the PEGI website and the PEGI Information App (available on [iTunes](#), [Google Play](#) and the [Windows Phone App Store](#)). Access to this information is open to the general public and free of charge.

The PEGI rating website is available in 23 languages and allows to query the classification data based on title, rating, genre, publisher, system and country. Each search result is complemented by the release date of the game, the age label and descriptors applicable to the game, as well as extended consumer information explaining what these labels stand for in terms of game content.

The PEGI mobile phone app gives you access to the same database and provides the same information.

2. The administrators and owner of the rating system, as well as the designated coders of the publishers can query each of the abovementioned data fields of the master database to extract relevant information which can be exported in an Excel sheet (XLS format). The coders' access to this information is limited to their own company's data.

3. The PEGI administrator is sometimes notified with a request to receive a database update with a specific date range to cover. Such requests, which are not very frequent,

usually come from other classification boards who seek to update their inventory database at set times. The delivery file format is by default Excel (XLS).

4. In order to address growing demands by online retailers and game websites for rating data in XML PEGI has created a data export API which provides for an automated, read-only access to rating data in XML format. This allows a third party to create and run a routine (manually or periodically) to call the web service with a specific date range. The returned Rating Update in XML format can then be consolidated with their inventory database.

Access to this web service can be subject to written authorization in the form of a legal agreement which provides the third party the right to display the Logo and Descriptors on their service. The latter will need to ensure that the Labels and Descriptors are displayed in compliance with the PEGI Labelling Guidelines and that, of course, each of them correspond to the ones that were licensed by PEGI for each specific game title on each specific platform.

The API can be called with the following sample query commands:

1. Latest week - Example: <http://www.pegi.info/export/2015/weekly/latest.xml>
2. Latest month - Example: <http://www.pegi.info/export/2014/monthly/latest.xml>
3. Month by number - Example: <http://www.pegi.info/export/2014/monthly/11.xml>
4. Year - Example: <http://www.pegi.info/export/2014/export.xml>

As a result of all query commands the following information can be retrieved:

- **Items (ratings) in export:** <info><itemstotal>13</itemstotal></info>
- **Unique resource number (of the rating):**
<urn>30X00NWU0900003000000000</urn>
- **Title:** <title>Red Riding Hood</title>
- **Age rating:** <ageCategory>7</ageCategory>
- **Publisher's name:** <publisher>Collavier Corporation</publisher>
- **Platform:** <platform>Nintendo 3DS</platform>
- **Genre:** <genre>Strategy</genre>
- **Date of market release:** <releaseDate>2015-01-08</releaseDate>
- **Content descriptors:**
<descriptors><descriptor id="2">Sex</descriptor><descriptor id="1">Violence</descriptor></descriptors>

- **Consumer Advice (general):**
<consumerAdvice>The content of this game is suitable for persons aged 12 years and over only.</consumerAdvice>
- **Consumer advice (based on content):**
<questionAnswers><question number="37">Non realistic looking violence towards human characters</question><question number="39">Violence in a sporting context</question> <question number="40">Sexual images and/or sexual innuendo</question></questionAnswers>

3. The implementation strategy in stages

The overall strategy is to enhance interoperability of the PEGI classification data by adoption of the MIRACLE data model in order to improve data exchange relationships with internal and external parties, such as filtering software providers, game developers, publishing companies, first party platform providers, retail websites, parental control software providers, etc...

The implementation strategy will therefore need to take account of the usability of this format to the end-user. In that context, future availability of the data model in a JSON format is an important factor to consider as well. Such format is more widely adopted in the mobile application environment and can play a role in the development of IARC.

Our strategy for implementation will start with a review of the current data export methodologies, but will also seek to include new areas of application. It will consist of a gradual step by step process in four distinct different phases.

Phase 1: extension of the current XML feed

The XML feed (see data export methodology 4) is currently the only data export channel with an XML output. We will therefore start the implementation process by extending the current API into the MIRACLE format. Because both XML formats share some of the same data fields, so we expect that this process can be executed quickly and smoothly.

As the output format of the XML feed will change we will need to notify current users and inform them of the proposed changes. This will allow us to inquire about their views on the introduction of this data format and its implementation into their technical services. It will also allow us to query their changing needs in terms of data input and their ideas for new innovative services in this field. Such information will give us a chance to make necessary changes early in the process. In other words, phase 1 can be considered as a test phase which allows to quickly detect and fix problems while only using a limited number of data and, as access numbers of the current web service are rather small, users.

Phase 2: creation of a new MIRACLE API

Based on the information acquired in phase 1 the technical subcontractor will start programming a dedicated MIRACLE API Controller that will allow to query the master database and provide XML output feeds in the MIRACLE format. This controller will be accessible via a new client interface allowing access from registered users by means of a dedicated API key.

The API will allow users to perform almost all search options that are currently possible in the internal area of the system. These include the search for a certain period of time, a particular country, a publisher, platform or genre. Furthermore, searching for ratings and game content will also be possible.

The existing feed users (phase 1) will be granted such an access immediately and will be asked to report on their experiences with the new API architecture.

Phase 3: full internal implementation

The PEGI membership will be notified about the existence of the new API and its functionalities. More specifically, the designated coders of the member publishers will be asked whether they would require the ability to extract relevant information from the master database in a MIRACLE format (data export methodology 2). We will also inquire if they see other means of applying the MIRACLE data model in their respective business environments. Based on this important feedback we will assess whether new data services need to be created.

The MIRACLE data model may play a role in the development of IARC as well. IARC provides one streamlined submission process in order to produce age classifications for mobile applications in several global regions at the same time. It applies a different workflow than the “classical” PEGI system as it relies on the central position of the app store/platform holder who has full control over the data and can retrieve an improper rating, if necessary. Exporting IARC classification data to external stakeholders will therefore not be possible. We will, however, investigate whether the MIRACLE format in an XML or JSON format can play a role in the provision of internal data reports, similar to PEGI’s second data export methodology.

Phase 4: outreach to external stakeholders

Finally, we will pro-actively approach external stakeholders to promote MIRACLE and assess whether the PEGI classification data can be of use to them in the new MIRACLE format. This will include re-contacting filtering and/or parental control software companies that were previously interested by our data and online retailers that apply the PEGI retail Code of Conduct, as well as some of the third party stakeholders that were involved in the CEO

Coalition dialogue. With help of our national trade associations, we will also try to identify and reach out to some of the leading companies in these sectors across Europe.

Timeline

We expect phase 1 to be finalized by the end of January 2015. As the MIRACLE API aims to be operational in the beginning of February the second phase will be completed by the end of that month. The third phase has no definite end date yet. While the PEGI coders will be contacted rapidly, the IARC project is still in development and the assessment of an application of MIRACLE might take a bit more time. Phase 4 will extend throughout the whole MIRACLE project, as it is work that is continuously in progress with no specific end date.