

OECD *GLOBALRECALLS* PORTAL

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Foreword

The OECD *GlobalRecalls* portal was launched in 2012 as a single window for governments to share information about product recalls worldwide. It has since developed into a significant resource, with over 27 000 product recall notices and 47 participating countries, and these figures continue to grow.

This report discusses the implementation of a series of enhancements to the OECD *GlobalRecalls* portal between 2015 and 2019, as well as support provided to jurisdictions by the OECD Secretariat between November 2018 and September 2019 to use the portal's new API functionality.

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1. Introduction

Taking into account the increased consumer product safety risks that globalisation across industries has introduced as products move along the supply chains, in October 2012 the OECD's Working Party on Consumer Product Safety (WPCPS) created the *GlobalRecalls* portal¹ – a single window for sharing information about product recalls worldwide. This international database, which, in April 2020, contained more than 27 000 product recall notices across 1 700 product categories, is available for governments, businesses and consumers alike and brings together publicly available information on mandatory and voluntary recalls of non-food consumer products issued by governments worldwide.

Information on the portal integrates data from Australia, Canada, Colombia, Costa Rica, Israel, Japan, Korea, the United States, the United Arab Emirates, the European Union's (EU) rapid alert system for dangerous non-food products (Safety Gate) and the Product Recalls portal of the Association of Southeast Asian Nations (ASEAN). Based on Google Analytics data, since its inception, the *GlobalRecalls* portal has attracted users from over 180 countries with most visitors coming from the Russian Federation, Canada, the United States, Germany and France.

The platform aims to help reduce injuries by improving detection and reaction to consumer product safety issues within and across jurisdictions. As such, it aims to stimulate stronger knowledge-based approaches to regulation and enforcement and to develop coherent responses to consumer product safety issues globally.

To enable participating governments to group their product recalls in a consistent manner, the portal uses the Global Identification Number (GTIN) and Global Product Classification (GPC) standards developed by GS1², a not-for-profit international organisation whose headquarters ("GS1 Global") are based in Belgium, and whose local Members are spread out in more than 100 countries. GS1's standards enable data interoperability between a number of jurisdictions which do not have the same recalls and product categorisation systems in place, and/or do not have any domestic recall databases. The building block of the GPC is a product code known as a "brick," available for a wide variety of goods, ranging from cars to baby strollers (Figure 1).

The GPC is published in Oxford English under the responsibility of GS1 Global, and is updated by the organisation twice a year. Sixteen GS1 members currently provide translations³ of the updated GPC versions (although not on a regular basis, and not at the same time).

Figure 1. Example of GPC segments and bricks for a hot beverage maker

The screenshot displays the GPC interface with the following details:

- Language:** English
- Publication:** GPC as at June 2014 (GDSN Production Versio)
- Segment:** Home Appliances
- Family:** Small Domestic Appliances
- Class:** Food/Beverage Preparation Appliances
- Search:** Brick
- Exact wording:**
- Search:** [Search button]

The hierarchical tree structure is as follows:

- Expand All | Brick | Class | Family | Collapse All
- Segment: 72000000 - Home Appliances (Segment code: 72000000)
 - Family: 72010000 - Major Domestic Appliances (Family code: 72010000)
 - Family: 72020000 - Small Domestic Appliances (Family code: 72020000)
 - Class: 72020400 - Cleaning Appliances
 - Class: 72020200 - Food/Beverage Preparation Appliances (Class code: 72020200)
 - Brick: 10002015 - Butter Makers (Powered)
 - Brick: 10002000 - Can Openers (Powered)
 - Brick: 10002019 - Candyfloss Machines
 - Brick: 10002016 - Carbonated Drinks Makers
 - Brick: 10005690 - Chocolate Fountains (Powered)
 - Brick: 10002006 - Coffee Grinders (Powered)
 - Brick: 10005358 - Cookie Guns (Powered)
 - Brick: 10002018 - Dehydrators (Powered)
 - Brick: 10002022 - Food/Beverage Appliances Variety Packs
 - Brick: 10002020 - Food/Beverage Preparation Appliances Other
 - Brick: 10002021 - Food/Beverage Preparation Appliances Replacement Parts/Accessories
 - Brick: 10005689 - Frozen Drinks Makers/Ice Shavers (Powered)
 - Brick: 10002005 - Graters (Powered)
 - Brick: 10002011 - Hot Beverage Makers (Brick code: 10002011)

A small image of a Philips coffee maker is shown to the right of the tree.

To improve and facilitate users' search experience, a series of technical and functional enhancements to the portal have been implemented since December 2015. Consistent with the high level requirements contained in the business plan prepared by the Australian Competition and Consumer Commission [DSTI/CP/CPS(2015)2]⁴, the work, which has been conducted by the Secretariat to the OECD Digital Knowledge and Information service (DKI), in co-operation with the WPCPS' technical team and Secretariat, has been conducted under the following three phases:

- **Phase I:** Upgrade of the portal's infrastructure.
- **Phase II:** Improvements to the portal's design interface, and development of a new global product taxonomy.
- **Phase III:** Import of the new taxonomy onto the portal; semantic enrichment; manual submission of recall notifications to the portal without WPCPS Secretariat assistance; and expanded language capability into French, Japanese and Spanish.

Following additional support received from the Australian Competition and Consumer Commission in June 2018, a new phase of work ("Phase IV") was agreed to enable automated submission of product recalls directly from jurisdictions' local recall databases into the portal.

The following provides an overview of the main changes made under Phases I and II, as well as information on the additional enhancements implemented under Phase III and Phase IV.

2. Phase I (December 2015 - June 2016)

The changes made to the portal under Phase I involved an upgrade of the portal's infrastructure, as well as functional changes. These improvements were presented to stakeholders at the OECD's Ministerial on the Digital Economy, held on 21-23 June 2016 in Cancún, Mexico.

2.1. Technical upgrade of the portal

To ensure that the portal remains a flexible platform that can evolve over time, a new host environment was put in place by DKI to support XML data management and search capabilities based on *Marklogic* technology. Such an upgrade was regarded as a prerequisite to the possibility of adding, in the future, new and enhanced functionalities, such as multilingualism and content enrichment; the implementation of a new taxonomy; and linking of the portal with other regional or international organisations' platforms.

2.2. Functional changes

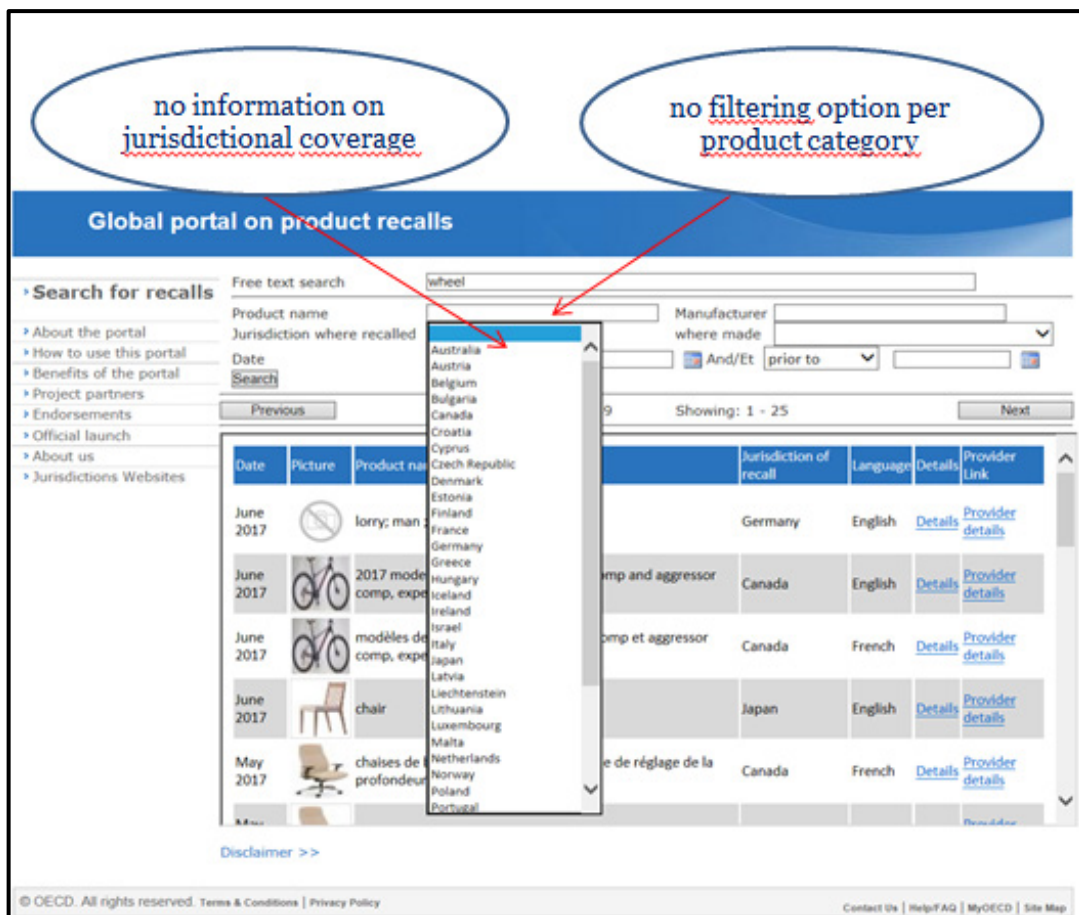
In addition to the technical improvements, the following functional improvements were made to the portal:

- The manual import of the latest version of the English and French versions of GS1's GPC, as well as the implementation of a synchronisation process⁵ (R7.1). This allows for the GPC to be updated into the portal on a regular basis when a new version is released by, respectively, GS1 Global and GS1 France (R7.2). Following such an update, a report can be generated automatically, which lists any orphaned product categories in use in the portal to provide a list of recalls impacted by the new categorisation.⁶
- The removal of unnecessary/irrelevant links in the portal (R1.1).
- New filtering options. These include new search fields, which, for example, can direct users to a manufacturer's website, or enable them to search for a recall not only in an individual EU Member State but also in the whole EU/EEA area. Some schema country codes (which are based on ISO 3166) were also modified to enable a more granular search per jurisdiction (to, for example, separate Abu Dhabi from the United Arab Emirates through the inclusion of ISO 3166-2:AE (R10)).

3. Phase II (November 2016 - July 2017)

With a view to enhancing stakeholders' browsing experience on the portal and, thereby, increasing its usage (examples of the limitations on the old version of the portal are shown in Figure 2), Phase II primarily focused on transforming the portal's design interface to make it more dynamic, user friendly, and accessible *via* mobile devices. In addition, a new global product recalls taxonomy was developed by DKI in French and English, with the support of Canada, France, and the United States.

Figure 2. Jurisdictional coverage: Information gaps in the old version of the portal



Source: Previous version of the OECD *GlobalRecalls* portal (no longer available)

3.1. Changes to the design and content of the portal

The user experience improvements are reflected in the new version of the portal, which went live in September 2017. The changes were as follows:

- **Improved design, search and filtering capabilities (R2.1, R3, R4.3, R5.2 and R5.3):** New filtering options, such as search by product category, were added. This included the possibility for users to extend further the search results for a specific product sub-category, and to narrow down their search, by selecting one or several jurisdictions (Figure 3). In addition, users are

now provided with more granular product categorisation information, at segment, family, class and brick level (Figure 4).

- **Increased transparency through new product coverage disclaimers (R4.1, R4.2, and R4.3):** Users are now informed about limitations in jurisdictional coverage or gaps, which may be due to differences in product recall categorisations across jurisdictions.
- **Categorisation remediation (R8):** Due to the migration plan of recalls from the old portal to the new database, some recall notifications could not be loaded due to non-compliant data, while others had been uploaded with errors. Remediation reports were established to highlight the need to, for example, clean-up missing and multiple codes, change segment codes incorrectly placed in the GTIN field, or rectify problems with picture formats. These reports were then generated by the Secretariat and sent out to the each relevant jurisdiction for correction purposes.

Figure 3. Enhanced information on jurisdictional coverage in the new version of the portal

Search in all categories









Records found: 656
Filters used:

Filter by category

Filter by jurisdiction of recall

- France (36)
- Germany (57)
- Greece (9)
- Hungary (26)
- Italy (3)
- Japan (10)
- Latvia (9)
- Lithuania (28)

Filter by country where made

Date <input type="checkbox"/> ^	Picture	Product name <input type="checkbox"/> ^	Jurisdiction of recall <input type="checkbox"/> ^	Country where made <input type="checkbox"/> ^	Language <input type="checkbox"/> ^	Authorities link
2017-06-01		Toy car; Unknown ; CARTO...	Spain		English	^
2017-05-31		Plastic toy car; JUGUETES...	Spain		English	^
2017-05-31		Toy car with battery charger;...	Hungary		English	^
2017-05-18		<p> RipStik Electric Motorize...	Canada	People's Republic of China	English	^
2017-05-17		Lorry; Mercedes-Benz ; Actr...	Germany		English	^
2017-05-17		Push-along toy; Unknown ; P...	Poland		English	^
2017-05-15		Pull-along toy; ZEEMAN ; Ev...	France		English	^
2017-05-12		Plastic toy; Playing Kids ; a...	Netherlands		English	^

Source: Screenshot from the current GlobalRecalls website.

Figure 4. New filtering options at segment, family, class and brick level

The screenshot displays the GlobalRecalls portal interface. On the left, there is a 'Filter by category' sidebar with options like 'Arts/Crafts/Needlework', 'Automotive', and 'Cleaning/Hygiene Products'. Below this are filters for 'jurisdiction where recalled', 'country where made', and 'date'. The main search area has a search bar with 'wheel' entered. A dropdown menu shows various segments, with 'Automotive' selected. Below the search bar is a table of search results with columns for 'Product name', 'Jurisdiction of recall', 'Language', 'Details', and 'Provider Link'. The results include items like 'propane (lp) gas', 'high chairs', and 'snowmobiles'. At the bottom, a 'Categorisation' panel shows a hierarchy: GTIN Code, GS1 Segment (Fuels/Gases), GS1 Family (Fuels/Fuel Additives), GS1 Class (Fuels/Ignition Aids), GS1 Brick (Gas Fuels), GS1 Attribute (Type of Fuel), and HTS Code (BUTANE). An orange arrow points to the 'Type of Fuel' link with the text 'Hyperlink to extend search results'.

Source: Adapted screenshots from the current *GlobalRecalls* website.

3.2. New global product recalls taxonomy

From January to July 2017, DKI developed a new global taxonomy describing products and parts of products for use by semantic analysis tools. The system now allows for an automatic tagging of product recalls, and enables stakeholders to refine their search semantically within and across recalls. Users are pointed to similarities of recalls across GPC segments, and benefit from an enriched lexical database.⁷ In the future, should the WPCPS wish so, the taxonomy could be mashed up with other taxonomies on, for example, product hazards or injuries.⁸

The taxonomy was created from the lexical labels used in the English and French versions of the GS1's GPC classification and from the text of existing product recalls. As such, the GPC remains the backbone of the portal, but is being complemented by the enriched glossary. Health Canada, the US Consumer Product Safety Commission and France's *Direction Générale de la Concurrence, de la Consommation et de la Répression des Fraudes* worked together with DKI to check the quality of more than 2 000 of the concepts created, which included:

- 6 898 labels created in French; 8 911 labels created in English
- 3 121 links created between concepts (verticals : « product A is a type of product B » or horizontal : « product A is related to product B »)
- 6 major domains of recalls covered including toys, automobiles, clothes, electricity, sports and household.

The new taxonomy, which is meant to be an evolving instrument, is reviewed and updated periodically by DKI.

4. Phase III (September 2017 –November 2018)

This phase of improvements, completed in November 2018 and released in January 2019, involved importing and enriching the new taxonomy, expanding the multi-language capacity, and introducing new functionality for uploading recall notices to the *GlobalRecalls* portal.

4.1. Import of the new global product taxonomy and semantic enrichment

This new phase of improvements, which is ongoing, has involved the:

- import into the portal of the new global product taxonomy
- semantic enrichment of all existing recalls with the taxonomy (with mechanisms of disambiguation)
- combined use of the taxonomy and semantic tags to enrich the recalls in the search experience.

4.2. Expanded multi-language capacity

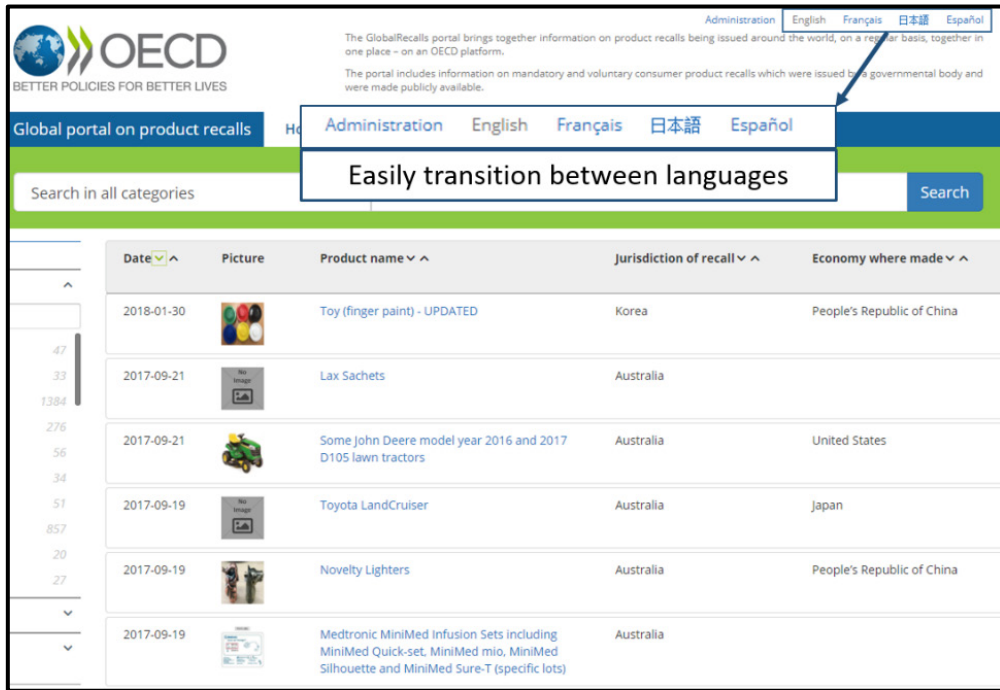
Some static elements of the portal’s interface were translated into French, Japanese and Spanish, to enable users to switch between languages while visiting the portal (Figure 5). Translated content included the menu, list of economies under “jurisdiction of recall” and “economy where made” sections, the database headings, and content of the following sections (Figures 6, 7 and 8):

- About the portal
- Benefits
- Project partners
- Endorsement
- Official launch
- About us
- Jurisdictions websites and disclaimers pages.

In addition to the translation of the static pages, database headings and economy names, the portal now includes the translation of the left-hand-side product category navigation (the GPC), in French, Japanese and Spanish (Figure 9), along with a *GoogleTranslate* feature that automatically translates the content of each recall notice into the three languages. Within the French version of the website, over 6 800 labels have been integrated in French. This cross-language search functionality allows for a product that is searched in either English or French, to generate results with recall notices from both languages (Figure 10).

In April 2019, during the 18th WPCPS meeting, the Korean delegation announced that it would fund the incorporation of the Korean language facility on the portal. This functionality was made available in early 2020.

Figure 5. Language selection panel on the portal



Source: Adapted screenshot from the current OECD GlobalRecalls website.

Figure 6. Example of a static content page in French



Source: Screenshot from the current OECD GlobalRecalls website.

Figure 7. Example of a static content page in Japanese



Source: Screenshot from the current OECD GlobalRecalls website.

Figure 8. Example of a static content page in Spanish



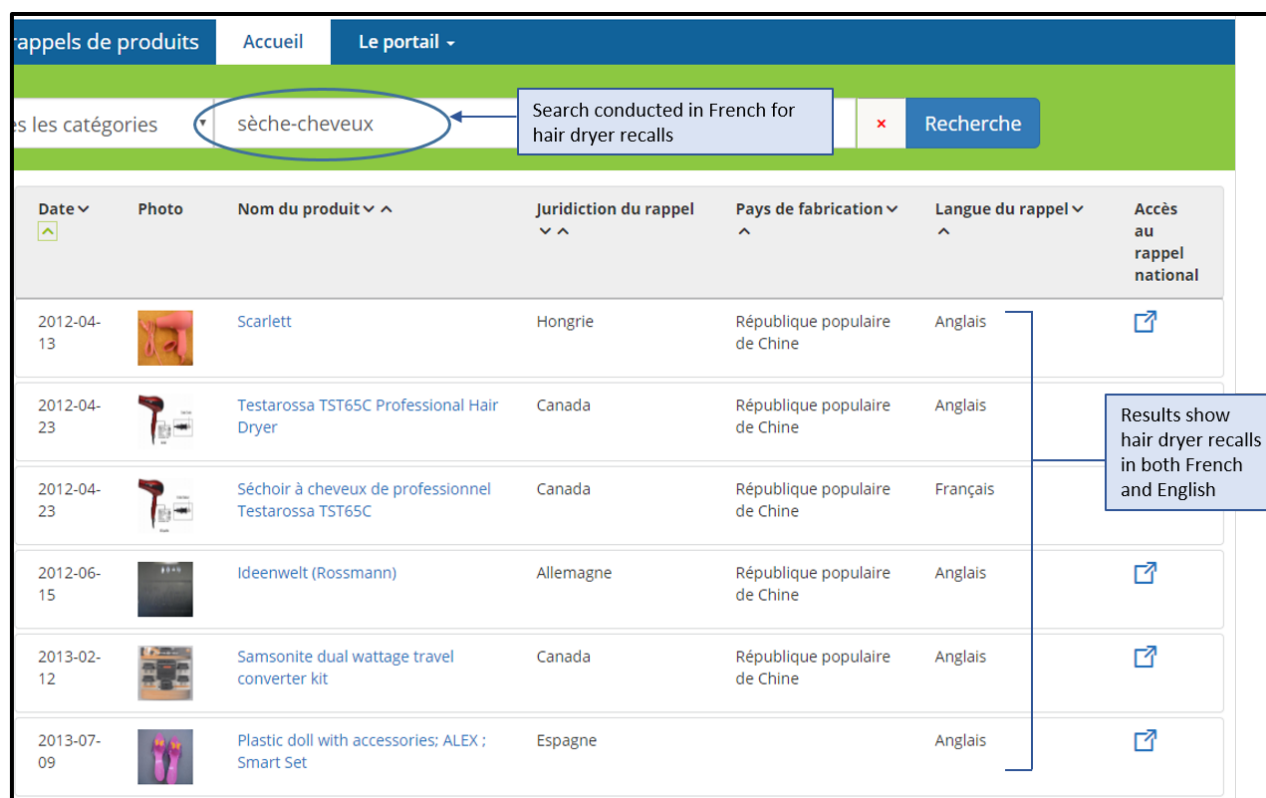
Source: Screenshot from the current OECD GlobalRecalls website.

Figure 9. Translation of the GPC in French, Japanese and Spanish



Source: Set of screenshots of the left-hand side navigation on the GlobalRecalls portal.

Figure 10. Example of multiple language search results



Source: Adapted screenshot from the current OECD GlobalRecalls website.

4.3. Manual upload of recalls by jurisdictions

In November 2018, a new Application Programming Interface (API)⁹ was developed to enable jurisdictions to manually submit their recall notifications directly to the portal, without relying on the WPCPS Secretariat. Each agency contributing to the OECD portal was invited to submit a request for API keys via an API key request form (see Annex A) to upload its product recall zip files into the GlobalRecalls portal (Figure 11). Each API key is associated in the database with:

- a country code
- one or more email addresses to which recall integration reports are sent (“Report Address”)
- a jurisdiction or institution name
- contact details of one or several agency representatives (in case of problems).

Figure 11. Direct recall upload screen

Administration English Français 日本語 Español

The GlobalRecalls portal brings together information on product recalls being issued around the world, on a regular basis, together in one place – on an OECD platform.

The portal includes information on mandatory and voluntary consumer product recalls which were issued by a governmental body and were made publicly available.

Recall imports

API key*

input api key here

SELECT RECALLS ZIP

you can also drag and drop files into the box

Upload

Documentation for recalls import
Download Products taxonomy (XML/RDF)

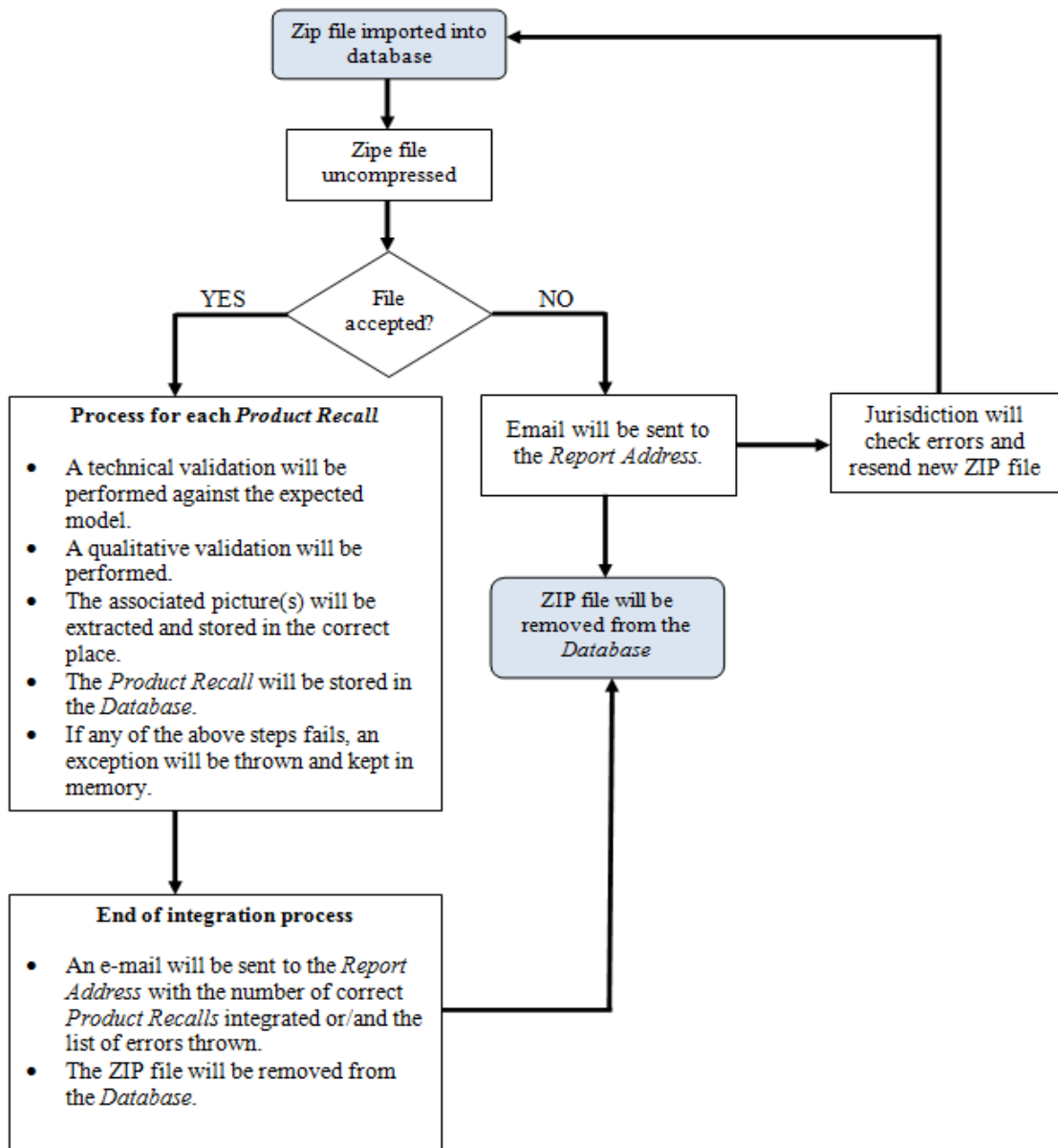
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Source: Screenshot from the *GlobalRecalls* portal’s pre-production site.

Once uploaded by a user, the zip file is checked by the system and the recalls within the file are added to the portal. The user receives an e-mail notification confirming whether the recalls have been successfully added to the portal or whether any errors need to be rectified. Figure 12 outlines the possible scenarios upon receipt of the zip file.

The Secretariat to the DKI demonstrated the functionality to the WPCPS during its 17th meeting in November 2018 and a pre-production environment of the portal was set-up for all agencies to practice uploading recalls independently prior to the new functionality going live in January 2019. Supporting documentation¹⁰ was also made available via the website, which included detailed steps for uploading recalls, along with XML schema examples and empty XML structures that jurisdictions could use as a guide to prepare their own recalls.

Figure 12. Process flow of a zip file imported into the *GlobalRecalls* portal database



5. Phase IV (November 2018 to end-2019)

5.1. Automatised upload of recalls onto the portal

In addition to allow for the manual upload by jurisdictions of their recall notices, the development of the API has enabled jurisdictions to automatically push the recall notices contained in their domestic recall databases into the *GlobalRecalls* portal. This functionality is, however, subject to the technological capacity¹¹ of each jurisdiction to automate the uploading process from their end. Since November 2018, jurisdictions wishing to implement this functionality have been invited to contact the Secretariat for a one-on-one technical workshop. To date, the OECD (WPCPS and DKI Secretariats) has hosted such “workshop webinars” with Australia, the European Commission, the United Kingdom and the United States.

As a result of these workshops, Australia is now using the automated API functionality to push recalls from its recalls database to the *GlobalRecalls* portal. Other countries are actively pushing recalls to the system using the manual upload method, while also considering to move to the automated system in the future.

5.2. New jurisdictions contributing to the OECD *GlobalRecalls* portal

Between January and September 2019, the WPCPS and DKI Secretariats also hosted similar “workshop webinars” with the following jurisdictions after they indicated interest in linking their domestic/regional recalls portal with the *GlobalRecalls* portal:

- Association of Southeast Asian Nations (ASEAN)
- Brazil
- Colombia
- Costa Rica
- Peru.

Following these workshops, the ASEAN Secretariat has set-up its system to automatically push recalls from the ASEAN recalls database to the *GlobalRecalls* portal. Colombia and Costa Rica are now uploading recalls to the *GlobalRecalls* portal, while Brazil and Peru have access to the portal’s pre-production site to conduct tests and will inform the WPCPS Secretariat when they are ready to upload recalls to the live site.

It is envisaged that the API functionality will continue to pique the interest of jurisdictions worldwide, motivating others to also contribute to the portal and add to the rich tapestry of recalls data in the *GlobalRecalls* portal.

Annex A. API key request form



Organisation for Economic Co-operation and Development

OECD GLOBALRECALLS PORTAL

API Key Request Form

Each agency contributing to the OECD *GlobalRecalls* portal needs access to at least one API key. For manual uploads, one API key can be allocated per staff member designated to contributing to the OECD GlobalRecalls portal. It is up to each agency to decide the number of staff members that should have access to an API key. For automated uploads via a server, the agency will need access to at least two API keys (one for the server and one that can be used for manual uploads by a user if any issues arise).

Please complete and send the following form for each API key request to GlobalRecallsdata@oecd.org.

Name of the person/server associated with the API key	First name:
	Last name:
Email address/es You can nominate one or more email addresses per API key. Email addresses can also include generic group email accounts.	
Agency/Institution	
Jurisdiction (name of country/economy)	
Modes of import required for this API key Please nominate whether the user of this API key has permission to insert, update and/or delete your jurisdiction's recalls from the portal.	Please indicate a response for each option: Insert – YES / NO Update – YES / NO Delete – YES / NO

For more information on API keys, visit the API key page on the [OECD GlobalRecalls portal](#).

Data protection disclaimer: Please note that the data provided via this form will only be used for the purposes of assigning an API key for use on the OECD GlobalRecalls portal. Personal information will not be used or shared with third parties for any other purposes.

Notes

¹ The OECD *GlobalRecalls* portal is available at: <https://globalrecalls.oecd.org>.

² More information about GS1 is available at www.gs1.org/about.

³ The following translations of the updated GPC versions are being provided by local GS1 Members: Arabic, Chinese, Czech, Danish, Dutch, Finnish, French, German, Italian, Japanese, Macedonian, Persian, Portuguese, Russian, Serbian and Swedish.

⁴ The business plan was approved by the WPCPS at its May 2015 meeting.

⁵ To enable such an import, GS1 Global agreed to provide the OECD Secretariat with a file containing a unique URL that will remain constant.

⁶ Recognising that continuous review of product categories by the OECD's DKI team and by jurisdictions may not be feasible in the long-term, in May 2019, the OECD WPCPS and the DKI Secretariats commenced discussions with GS1 Global on ways to align referencing of GPC codes from multiple GPC versions.

⁷ For example, when searching for terms like "puppet," users can also find related concepts, such as "doll"; or when searching for "marionette," users can also find sub-concepts, such as "finger puppet" and "glove puppet".

⁸ In 2017, the WP technical team examined such an option, which it however did not see as a priority requirement.

⁹ The API is a technology that enables two applications to communicate with one another, allowing seamless movement of data from one application to another through a secure interface.

¹⁰ The *How-to guide for preparing and sending recalls* is available at: <https://globalrecalls.oecd.org/#/admin/import-documentation>.

¹¹ Agencies will need to have the capability to use the API in machine-to-machine mode, which involves having the ability to automatically export the recalls, convert them into the right XML format, compress them and their related pictures in ZIP format and ensure agencies' servers have the capacity to access the *GlobalRecalls* portal via an Internet zone.