Requirements for UIC applications

Writers
- Frédéric BRU (web infra)
- Pascal BERTON (internal infra / azure AD)
- Vincent PERALTA (BDD, dev)
- Aymeric BONIOU (web, graphic charter)
- Clémence FORGET (web edition)
- Françoise ENJOLRAS (Data protection officer)

Purpose of the document

The objective of this document is to homogenize UIC's web developments. This document should gather information about the framework and technical resources of web developments undertaken at UIC.

It should also provide resources and guides for harmonizing the interfaces of these web developments.

All of these elements should be guaranted:
1. Security and integrity of the information system
2. Interoperability of these different developments and the applications between them
3. Reusability of certain components (technical or graphical)
4. Optimization of development time
5. Enhanced maintainability
6. Durability and easier redesign

7. Reversibility of data (get back our data easily and without any cost)
8. Intellectual property of the software and code (UIC Github repository)
9. GDPR compliance of softwares

Any application developed for UIC (internally or externally) must have a clearly identified technical and functional (business) manager. The IT department must have at least the administrator account information as well as the user and technical documentation. (see chapter "validation process" below).

SSO (Pascal)

Implementation if possible of the Azure AD SSO for the optimal experience of the UIC collaborators - the editor or the provider carries out the parameter setting so that the application connects with our Azure AD (ask Pascal).

SAML V2 compatibility required.

Security vulnerability for Web applications (OWASP) (Frédéric)

OWASP   (Open Web Application Security Project)

For each application test that the top 10 most critical security flaws.

"Communication Guidelines"

UIC Communication Guidelines : https://uic.org/com/guidelines

Here you will find:
1. The general guidelines for UIC communication
2. Visual identity guide
3. The guide A few points of reference on social networks (2018)
4. The guide to audiovisual projects at UIC (2018)
5. Suppliers' charter of best practice (2018)
6. UIC logos in different formats
7. Graphic pieces for your presentations

8. A presentation kit referencing UIC media to facilitate your presentations

Don't forget the UIC editorial charter.

Fonts

Prefer "font stack" techniques to the use of web fonts:
1. https://getbootstrap.com/docs/5.0/content/reboot/#native-font-stack
2. https://www.smashingmagazine.com/2015/11/using-system-ui-fonts-practical-guide/

If web fonts are used, however, it is preferable to use lightweight fonts in order to limit loading times:
1. https://fonts.google.com/specimen/Roboto
2. https://fonts.google.com/specimen/Open+Sans

Accessibility

Accessibility must be taken into account from the beginning and throughout the project.

To help you do this, numerous resources are available, such as the General Accessibility Improvement Reference Framework - GAAR

If the application/website uses many icons it is important to consider the cost on performance and accessibility constraints.
1. Icons should not be used for decorative purposes only, as they may add unnecessarily to loading times.
2. If icons are used, the use of images should be avoided. The dedicated font technique is more efficient and offers icons in vector format.
   a. The most popular solution is proposed by Font Awesome. Note that this technique remains expensive in terms of performance.
   b. You can then use services that allow you to choose the icons used in order to obtain a font that contains only the icons used by your application/website. Services such as Fontello offer to do this for free.

Illustrations/ Photos/ Iconographic research

Need illustration, photos : Media library UIC (Media Center) or Adobe stock (the purchase of user licences can then be requested from the Communication Department, which will purchase them via the Adobe UIC account).

To evaluate colour contrast, you may use this tool: https://color.adobe.com/fr/create/color-contrast-analyzer

SEO (Search Engine Optimisation)

Sharing features

Sharing functions are important for the SEO of public web pages. These buttons should allow a visitor to share the current page on social media. Example: LinkeIn and Twitter share button. These buttons usually use the Open Graph tags on your site (see below).

Open Graph

The Open Graph protocol

Example of an Open Graph tag:

```
<meta property="og:title" content="UIC - International union of railways - The worldwide railway organisation" />
<meta property="og:type" content="website" /><meta property="og:url" content="http://uic.org/" />
<meta property="og:image" content="http://uic.org/squelettes/ogdefaultimage.jpg" />
<meta property="og:description" content="Promote rail transport at world level. Promote interoperability, and as a standard-setting organisation.
Develop and facilitate all forms of (...)" />
<meta property="og:site_name" content="UIC - International union of railways" />
```

If you do not have the possibility to create a custom illustration you can use the default UIC Open Graph image : https://uic.org/ogdefaultimage.jpg

CSS (style sheets)

In order to develop style sheets in the best possible way UIC sites use Boostrap coupled with SASS CSS.

The use of SASS allows you to customise the CSS components used to obtain the lightest possible style sheet.

To go further and optimise display times as much as possible it is also easier to use SASS to implement advanced Critical path CSS.

Multilingualism (Françoise)

Before 2010 the UIC had 3 official languages: German, English and French.

This notion of "official languages" no longer exists.

Most of the applications developed at UIC are in English, but other languages may be available for specific needs. English remains the default language.

Depending on the target audience, multiple content and/or interface languages may be chosen (many CMS offer multilingual interfaces by default).

Interoperability (all)

What needs to be implemented for UIC applications to be interoperable.
- Web service (API)
- SSO
- Bootstrap
- Use of UIC taxonomy (keywords kit)

Application Portal (all)

All UIC applications must be accessible from the INTRANET application portal. It must also be referenced in the INTERNET site, if the target is external.

URL naming rule

The URL construction strategy, whether it is carried by a CMS (generally URL rewriting technique by the CMS or a module/plugin) or a development framework (programming of "routes", Symfony, Drupal or Django "URL dispatcher") is to put the name of the web site before the UIC domain name i.e. : back.uic.org or shop.uic.org.

Language (all)

Language of the interface: English

Validation process (all)

Pre-project validation - test site

....

Pre-production validation - pre-production site

....

Go live - production site

The IT department must have knowledge of the credentials of the administrator account, where the solution is hosted and the name of the service provider responsible for managing it, if applicable. Cloud hosting solutions must be validated by the IT department.

In all cases, the name of the business function manager should be communicated immediately to the IT department.

An FAQ, complete user documentation and technical documentation should also be delivered to the IT department.

Database: field and variable name (Vincent)

Table name with abbreviation

Name in English

Field names: table abbreviation + field name (if id => id)

UTF8

List of UIC compatible technologies (all)

CMS :

· Drupal 9
· Wordpress
· SPIP

Technologie front

§ Framework HTML : Bootstrap 4 https://getbootstrap.com
§ Framework CSS : Sass (http://sass-lang.com) ou Less (http://lesscss.org)
§ Javascript : jQuery (https://jquery.com)

Technologies back

§ .NET
§ Django (python)
§ Symfony (PHP)

UIC Web Hosting Platform (Frédéric)

This document lists the different technical possibilities for hosting applications on the UIC web platform.

Web platform on premise at UIC is mostly based on **Debian 10** (Debian 11 planned mid-2024). All packages are upgraded at least monthly to provide protection to the latests security issues.

Version may evolve faster than this document is updated depending on circonstances and opportunities, always contact us to get informed of the actual versions.

Web server : Apache 2.4

Main Apache modules : cgi, webdav, deflate, expires, fastcgi, geoip, mod_jk, mod-spamhaus, perl, php-fpm, proxies …

PHP versions - FPM only : 7.4 (soon deprecated), 8.2

Django : Django 2.2.19 et Python3.5

Python : venv required with python integrated if version different from default

.NET :

Databases : MariaDB 10.5 prefered, PostgreSQL 11 optionnal, SQLServer2012

SSO : Solution compatible SAML2 avec clients PHP, .Net (4.0 minimum) et Java (1.8 minimum)

Docker : 18.09

GDPR compliance (Françoise)

The 6 basic rules of the RGPD are explained here : https://uic.sharepoint.com/sites/Intranet-Informatique/SitePages/R%C3%A9glementation-G%C3%A9n%C3%A9rale-sur-la-Protection-des-Donn%C3%A9es-Personnelles.aspx

It is prudent to refer to the CNIL website for a complete overview of RGPD compliance requirements :

https://www.cnil.fr/fr/rgpd-passer-a-laction

For developers, the CNIL has published an excellent RGPD by design guide: https://www.cnil.fr/fr/guide-rgpd-du-developpeur

If you have not yet established the RGPD register of your processing operations involving personal data, please contact the DPO by writing to the DPO enjolras@uic.org