

Tags: informatique

A Swiss made library system – the motivation behind RERO ILS

On 12 July 2021, 58 libraries will migrate to a new library software currently developed in Switzerland by the Central Office of the RERO+ Foundation. This integrated library software (abbreviated ILS) requires a huge development effort and is therefore one of the most important projects within the Swiss library landscape in recent years.

RERO ILS is an integrated library system, developed in Switzerland and for Switzerland. Given its scope and scale, the project stands out. One might wonder why developing an ILS was preferred over adopting an existing ILS, and why such an initiative is being implemented now.

To answer these questions, this article briefly tells the history of RERO+ and describes the starting points that led to the launch of the RERO ILS project. It then presents three key points for the use of RERO ILS in Switzerland:

1. be modern, transparent and flexible;
2. leverage and develop competences for libraries;
3. build a public service in the medium and long term.

A short history of RERO+

The RERO+ Foundation is based on a long-standing tradition of cooperation between libraries in Switzerland. Its beginnings can be traced back to the REBUS Association, which developed the precursory library system SIBIL from the 1970s in Switzerland, France and Luxemburg. ¹ In 1985, an inter-cantonal convention then created RERO, which stands for «REseau ROmand», later renamed as Library Network of Western Switzerland (Réseau des Bibliothèques de Suisse occidentale). Initially created for the main university libraries of the French-speaking part of Switzerland, RERO expanded to include up to 220 institutions of several types and became the reference library network in the region. By the end of 2020, one Central Office coordinates the activity of five sites (Geneva, Neuchâtel/Jura, Fribourg, Valais and Federal institutions). These institutions co-finance the network and co-define the operating processes and strategic developments. In April 2021, a public interest foundation called RERO+ has been established to replace RERO. The following section describes the reasons for this pivotal decision.

RERO at breaking point

In its three decades of existence, RERO has developed a sophisticated expertise in library data management and software maintenance. It has also gathered an extensive knowledge of the needs of scientific, patrimonial and public libraries. RERO therefore was able to offer a wide range of services that were highly customised and widely used in the French-speaking part of Switzerland.

Yet, in recent years, three major changes had a profound impact on RERO and brought uncertainty about its future. Firstly, a new generation of ILS had emerged, while at the same time the ILS used by RERO libraries was approaching its end-of-life. The new generation of solutions is generally hosted by the software provider itself (therefore called «Software as a Service» (SaaS) solutions) and their primary interest is to unify the management of electronic and print resources. Secondly, in 2014 one of the main institutions – the Canton of Vaud – decided to leave RERO and to establish its own library network. Thirdly, in 2015 a national project called Swiss Library Service Platform (SLSP) launched, with the goal to create a collaboration platform primarily aimed at scientific libraries across Switzerland, based on a common, new generation ILS. SLSP started to operate in December 2020.

Around 2015 RERO was facing the following consequences: a reduced budget, the perspective of an ILS change and uncertainty about its possible interaction with the future SLSP.

To respond to this situation, RERO initiated various studies about its possible future, including strategic and economic analyses by a political task force, as well as more technological and domain-oriented studies by a working group composed of library experts. In addition, this group worked with an external expert to describe future scenarios for RERO.

Eventually a solution for the future emerged. RERO would stay apart from SLSP but all its scientific libraries – making up a major part of the network – would join the national platform by 2021. RERO needed therefore to refocus on a different and smaller clientele, initiate its own process of ILS change and thoroughly review its funding and operating model.

The RERO ILS project

The idea for RERO ILS took gradually shape during this period. After having evaluated other possible technical solutions, the RERO Central Office offered to develop a cloud-based, open source library software in-house. This solution would be built on top of the existing Invenio 3 software framework², which had been developed and used by the European Laboratory for Particle Physics CERN.

This proposal for the future ILS, which addressed the main challenges identified in all the studies about the future of the network, can be attributed mainly to the team at the Central Office of RERO.

A major incentive for the employees was not only to keep their jobs in the short-term, but especially to maintain and leverage the expertise and efficiency within their team. During this transition period, RERO lacked a forward-looking proposal and the major financing libraries were turning away from it. A logical consequence of this situation could have been a quick dissolution of the team and its competencies. The idea of RERO ILS was presented to the political authorities, integrating a wider concept of «competence and service centre for libraries», to be realised in a transition project called «RERO 21».

Having prospects for the future was a critical building block for RERO. This would also ensure a good transition for the academic libraries towards the network SLSP, thanks to the stability of the RERO team, whose skills were considered essential for a smooth migration.

A study about the feasibility of the project «RERO 21» was mandated. In the summer of 2017 the finished study showed that a competence and service centre with a new library software attracted the interest of the Swiss library community. It would be financially viable with the acquisition of new clients (i.e. libraries), not only in the French-speaking domain, but also in the German and Italian-speaking parts of the country.

With these findings, RERO decided to start the development of RERO ILS, in addition to its routine activities and the SLSP migration project. The political validation of the «RERO 21» by its stakeholders¹ In 2018, RERO stakeholders consisted mainly of the cantons of the French part of Switzerland, grouped in a political body called «Conférence intercantonale de l'instruction publique de la Suisse romande et du Tessin». came one year later, in 2018.

Due to the important reorientation of the institution, its legal form needed to be adjusted. The new partners decided to create the RERO+ Foundation, which became effective in April 2021.

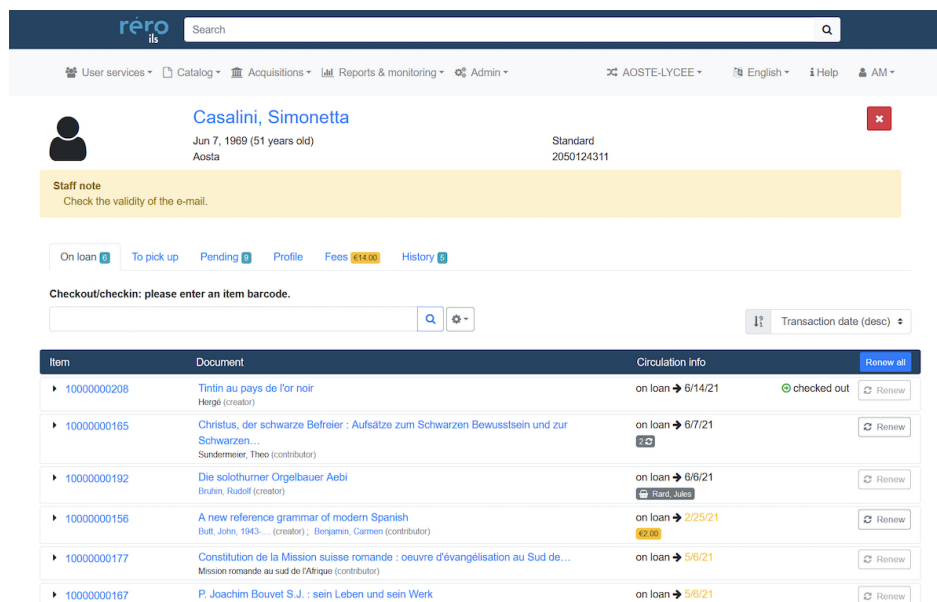


Illustration 1: The check-out interface of RERO ILS, with a fictive user.

RERO ILS: three fundamental criteria

Developing an ILS in-house in a short period of time requires considerable work and coordination, especially in order to meet today's technical and functional requirements. This becomes an even bigger challenge considering that the new software must replace a system that its developers had gradually improved for years according to the needs of the libraries. Three key points are set out to explain why RERO developed a new solution rather than installing an existing product.

1) Be modern, transparent and flexible

The new system has to be modern. It must be accessible through a web browser, be able to host multiple different clients (multi-tenancy) and be able to interface with other systems (see illustration 1). This communication can be achieved for example by a user identity server accessed by third-party content providers (e-book platforms), or simply by open APIs that can receive and provide structured data. The latter are a cornerstone of ILS in general, because they enable a close integration in system environments that can be very diverse: institutional websites, accounting software, self-checkout devices, broader search platforms, etc.

Open APIs are increasingly common for software and represent a typical feature of open source software. RERO ILS uses open source to ensure transparency for its public domain stakeholders. The source code can be accessed and reused for free, also because it is the output of an investment of taxpayers' money. In a broader sense, the whole development process has been made transparent. Most of the team's collaboration tools and documents, including functional specifications, prioritised features, development sprints, identified problems, interface translations and even every engineer's tasks are publicly available online. This mode of operation is a catalyst for cooperation. The development team designed the circulation module together with the experts at CERN so it could be included into the Invenio framework as a core component. Later, the Catholic University of Louvain showed interest in the project. Part of its team joined the existing team during development process. They are now an integral part of the RERO ILS project. Even independent people who showed their interest in the product have been able to contribute to some extent, e. g. with translations or corrections of small bugs.

RERO ILS must be flexible, which is made possible by the fact that RERO+ has control over the software. This enables RERO+ to address new requirements, as needs and workflows of the libraries are constantly evolving. Development synergies result in further flexibility. Low-level components are jointly maintained and used by RERO ILS and SONAR³, another product of RERO+. SONAR hosts institutional repositories and collects the scholarly publications of Swiss public research institutions. Both software products use the Invenio 3 framework (see illustration 2).

2) Leverage and develop competences in Switzerland for libraries

Over the years, the RERO Central Office has acquired and developed expertise in two domains. The first domain encompasses all technical aspects related to library data and software: data and application hosting, development of new features, search engines, data transformation, migration, etc. With its service RERO DOC, the Office has become a reference organisation in the implementation of the Invenio framework for digital libraries. Such technical competences are scarce in Switzerland, as other library networks have mainly been managed by the IT departments of the major universities, with broad fields of activity, and have rarely specialised development skills for libraries.

The second domain includes non-technical library skills related to data and systems. Small institutions often struggle to develop such skills, while the pooling of resources enables the team of the Central Office to develop their expertise in library standards (RDA, LRM, Bibframe), authority management, Linked Data and user experience. This helped to develop a close relationship with Abes⁴, the agency that coordinates the bibliographical activities of French universities. Because of this contact, RERO could deploy the IdRef⁵ authority file in Switzerland, a cornerstone of the work in cantonal libraries, while most public libraries could not afford it.

Combined, these two areas of competence enable at least three significant points of added value for libraries:

1. Ensure a high level of training and continuous education on the technical aspects of the field, which are increasingly important for the services offered by libraries in the digital age. This sharing of skills can take different forms, for instance with training sessions given by the Central Office, or with co-design of RERO ILS by integrating library staff in the specification and development process.
2. Satisfy specific requirements. User and library needs are constantly changing. New services must be created to address these needs, often involving software components and technical infrastructure. The combination of RERO's technical and non-technical skills made it possible to develop such specific services, for instance a customised function to book a document for a future period (a requirement of the universities of teacher training) or hosting a portal of the Swiss digitised press. Offering Libraries, also those outside of the group of RERO ILS institutions can benefit from the fact, that these skills are available locally in Switzerland. RERO+ will be able to realise custom developments for specific needs and to update its portfolio of services.
3. Design and carry out new projects. These projects enable RERO to maintain a degree of innovation in Switzerland in the field of libraries, and to convert those innovations into new sustainable services. One example is the SONAR project, which led to the launch of «institutional repositories as a service» for interested higher education institutions.

From the point of view of the Central Office, the development of RERO ILS caused a radical change in working habits, in a positive way. It empowered the skills of people who had been working for the network for years, even decades, and increased their motivation.

3) Build a public service in the medium and long term

RERO+ is a public interest foundation set up by four Swiss political bodies that oversee libraries in Switzerland: the cantons of Jura, Neuchâtel and Valais, as well as the City of Martigny (Valais) where the RERO+ Central Office is located. This foundation hosts the biggest library IT centre not run by universities in Switzerland, but focused on public, patrimonial and school libraries. It will therefore be able to guarantee the development of services driven by the Swiss library community and its stakeholders in the medium and long term. It will also assume a coordination with SLSP for a good system integration – above all in the interest of the patrons –, as some cantons participate in both organisations, whether as a founding member, shareholder or client.

As with all public sector services, RERO+ is a non-profit organisation. The price of its services is calculated according to the usage by each client in order to distribute the real costs as fairly and transparently as possible. From a financial point of view, the only objective is to ensure the sustainability of the foundation. With the establishment of SLSP, the Swiss market of library systems is relatively undiversified, with many, if not all, academic institutions using a single world leader solution in this field.⁶ An institution run by the libraries themselves will be able to stay independent from big commercial providers and guarantee medium- and long-term cost control.

In addition, some aspects are beyond the Central Office's operational competence, but can be of significant importance at the political level. These include ethical, legal or environmental issues. RERO+ can ensure the management and storage of personal data – and other future services – in Swiss territory. Being run and driven by the libraries, it can claim to be a independent information actor, at a time of frequent disinformation and the monopoly of certain companies on social networks. Finally, running a foundation like RERO+ in Martigny (Valais) also means investing public money in Switzerland, stimulating the regional economy and competitiveness with a highly qualified competence centre.

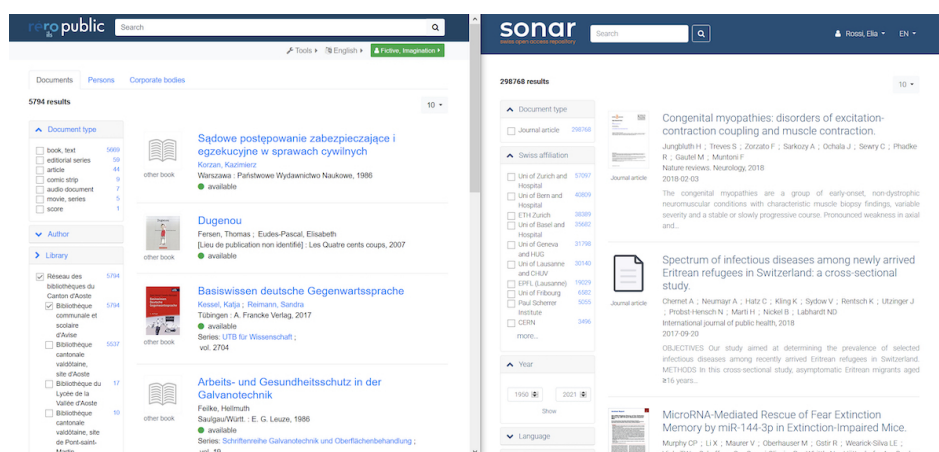


Illustration 2: RERO ILS and SONAR: two products, one common software framework.

Future development

In preparation for the migration, the 58 libraries and the RERO+ Central Office have been working hard on the configuration and mapping of their data for the new system in the last few months. The go-live in July 2021 will be followed by a proactive monitoring and stabilisation phase.

As a young and modern system, RERO ILS brings attractive new features and a significant potential of evolution and adaptation to new requirements; on the other hand, it does not yet contain the full range of functionalities that mature software solutions can offer. Partner libraries will therefore be involved in a major prioritisation of improvements, considering the needs of end users but also of professionals. Particular attention should be paid to a good integration with other Swiss library tools, especially those implemented by university libraries within SLSP. A user group will be set up to carry out this work. For its part, the Central Office will be active in the ongoing development of the solution and the integration of other interested libraries.

Get in touch

RERO+ is a competence and service centre for libraries, based in Martigny (Switzerland).

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- 1 GAVIN, Pierre. Sibil: un bilan pour le passé, et quelques jalons pour le futur [online]. Lausanne: Nouvelle association REBUS, 1997. [Accessed 12 May 2021]. Available from: https://www.informationsverbund.ch/fileadmin/shared/archiv_katalogisierung/pdf-Dateien/20-Sibil-bilan-jalon.pdf
- 2 <https://invenio-software.org/> (consulted on 04.12.2020)
- 3 Acronym of «Swiss Open Access Repository». <https://sonar.ch> (consulted on 05.02.21)
- 4 Acronym of «Agence bibliographique de l'enseignement supérieur».
- 5 <https://www.idref.fr/> (consulted on 05.02.21)
- 6 BREEDING, MARSHALL. 2021 library systems report. American libraries. 3 May 2021. Vol. 52, no. 5, p. 22–33.



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Résumé

Deutsch

Am 12. Juli 2021 wird RERO ILS von 58 Bibliotheken in Betrieb genommen. Das integrierte Bibliothekssystem (Englisch: Integrated Library System, kurz ILS) wurde und wird in der Schweiz spezifisch für die Bedürfnisse der angeschlossenen Bibliotheken ent- und weiterentwickelt. RERO (ein Amalgam von «Réseau romand») ist in der Schweiz eine bekannte Marke: Der Verbund war seit 1985 aktiv, wurde von knapp 220 Institutionen genutzt und getragen und entwickelte sich zum Netzwerk der wissenschaftlichen Bibliotheken und Spezialbibliotheken in der französischsprachigen Schweiz.

Die Marktentwicklung weg von alleinstehenden Katalogen hin zu umfassenden Bibliothekssystemen im Geschäftsmodell von «Software as a Service» (SaaS) setzte RERO unter Entwicklungsdruck. 2014 gab der Kanton Waadt, einer der wichtigsten Träger von RERO, seinen Ausstieg aus dem Verbund bekannt. Und nur ein Jahr später wurde die Swiss Library Service Platform (SLSP) aus der Taufe gehoben, die seit Ende 2020 allen wissenschaftlichen Bibliotheken in der Schweiz eine gemeinsame Dienstleistungsplattform bietet. Nach Bedürfnis- und Machbarkeitsabklärungen nahm RERO das Projekt Rero ILS in Angriff, mit dem Ziel ein schweizeigenes ILS zu entwickeln. Drei zentrale Kriterien mussten erfüllt werden: Erstens musste RERO ILS ein modernes, transparentes und flexibles System werden, d. h. anschlussfähig für Anwendungen Dritter, z. B. e-Book-Plattformen und Buchhaltungs-Software. Zweitens sollte lokal bereits vorhandene Expertise – sowohl im RERO-Kernteam wie bei den mitwirkenden Bibliotheken – wirksam genutzt und weiterentwickelt werden. Drittes musste RERO sich zu einem öffentlichen Dienstleister mit mittel- und langfristiger Perspektive entwickeln. Um Letzteres auf eine solide Basis zu stellen, wurde die Stiftung Rero+ gegründet, getragen von den Kantonen Jura, Neuenburg und Wallis sowie der Stadt Martigny, wo das Entwicklerteam seinen Sitz hat. Dieses wird zusammen mit den Bibliotheken, die RERO ILS verwenden, das System gemäss deren Bedürfnissen weiterentwickeln.