

#### **TALER**

### Taxable Anonymous Libre Electronic Reserves

Project number: Horizon Europe 101135475

# $\begin{array}{c} \text{D3.2} \\ \text{TALER Bookseller} \end{array}$

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Coordinator:

Eindhoven University of Technology

ngi.taler.net

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PP	Restricted to other programme participants (including the Commission services)	
$\mathbf{RE}$	Restricted to a group specified by the consortium (including the Commission services)	
$\mathbf{CO}$	Confidential, only for members of the consortium (including the Commission services)	
SEN	Sensitive	

#### TALER Bookseller

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		HISTORY OF CHANGES
VERSION	PUBLICATION	CHANGE
	DATiE	
0.1	2025-05-09	Preliminary version (unreleased)
0.2	2025-05-28	Preliminary version (for review)
0.3	2025-05-28	Add future work section
0.4	2025-05-29	Integrate CBG and GLS feedback
0.5	2025-05-29	Add screenshots and fix lists
0.6	2025-05-30	Refer to Exodus Privacy
0.7	2025-05-30	Arrange screenshots and link to follow-up topic on TALER
		ICH
0.8	2025-05-30	Final review by GLS
1.0	2025-05-30	Finalize D3.2 report (no change)
1.0.1	2025-09-05	Add table of contents (no change)
1.0.2	2025-09-16	Added Introduction and FInal Considerations

#### Abstract

The TALER Bookseller, second deliverable by PS, and third in WP3 was delivered on time despite unforeseen constraints.

The TALER Bookseller provides a fully working demonstration of GNU Taler software, enabling anyone to acquire digital versions of books sold by PS using Taler payment system online.

Keywords: WP3, PS, Bookseller, Taler, implementation, BOOKZ

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### Chapter 1

### Introduction

This report describes the launch of the TALER Bookseller, an important part of the Work Package 3 (Verticals Towards Commercialization) of the TALER project.

The TALER Bookseller is the consolidation of the vertical of Publishing, and the core of Task 3.2: Vertical 2: Independent Book Sector. In this task, PS integrated GNU Taler in its business model, and is now able to sell books using it.

Due to the delayed rollout of Taler payments in Euros, the bookseller cannot be used to buy books in Euros at this time, however, it is now fully operational using a demo currency BOOKZ, and has been used already. The report also details feedback given to WP5 regarding the usabilty of the merchant and bank software.

### Chapter 2

### D3.2 TALER Bookseller is online!

WP3, Verticals Towards Commercialization aims to investigate three vertical markets, in complement to WP2's Finance vertical market:

- 1. The Independent Book Sector (#books)
- 2. Inclusion and e-Health (#inclusion)
- 3. The Free/Libre Open Source Software Supply Chain (#floss)

The TALER Bookseller focuses on the first item and proposes that PS, the publishing partner within the TALER consortium, sell their books online using GNU Taler. This report provides details of the implementation and access to the online shop running the system.

#### 2.1 Means of Verification

- 1. The website https://bookseller.taler.net/ is online.
- 2. Anyone can follow the demonstrator: installing TALER Wallet, obtaining credits from the demo bank, shopping for PS books, obtaining the corresponding digital files.
- 3. TALER Bookseller announcement to the Fediverse: https://ich.taler.net/t/ngi-taler-bookseller-d3-2/419
- 4. Press Release is public: https://ich.taler.net/t/ngi-taler-bookseller-d3-2-is-online/418
- 5. PS TALER page links to the TALER bookseller: https://ps.lesoiseaux.io/taler/#taler-d32
- 6. PS online store proposes to pay with TALER: https://shop.bookseller.taler.net/

### Chapter 3

### Making of D3.2

The independent book sector forms an ideal market vertical: all publishers have web sites, they form tight networks with their supply chain (printshops, distributors) and customers (bookshops), and cooperate at regional, national, and international level through federations. Moreover, since the 2020 confinement, most independent publishers and bookshops started selling online independently, considering Amazon, with reason, a threat to their operations and sustainability. As an independent publisher, PS is part of this network of MSMEs who actively resist monopoly and are eager and determined to embrace innovation.

The history of PS stems from free software activism and book making. Even before we incorporated our association, we were active making books: our founders were instrumental in structuring Cost of Freedom (2015), in support for late Syrian Creative Commons activist Bassel Khartabil, who died in Bashar Al Assad's prisons; they also ran a booksprint for software freedom, your way (2016) which documented the Debian fork and proposed a human and collective approach to free software that informed the core of petites singularités' path forward.

From this experience, PS started producing books on a yearly basis since 2019, and started professionalizing this activity since 2021. Coming from free software and the GNU project, it was only natural for PS to embrace GNU Taler, a promising electronic payment system that was the only credible proposal from the free software community to counter dominant projects competing to take control of online payment systems across the board. Besides being the only viable proposal coming from the free software, GNU Taler offers unique characteristics that make it a serious contender against industrial giants in payment systems.

GNU Taler's unique design brings, in our opinion, four invaluable advantages over the competition:

- 1. privacy of the buyer (good to uphold EU values);
- 2. transparency of the seller (good for thwarting tax evasion and money laundering);
- 3. free software (good for technical sovereignty and security);
- 4. and *much cheaper operational costs* than existing solutions (good for long-term competition and keeping transaction costs low).

To an independent publisher in 2025, who needs to sell books online and at events, GNU Taler provides a cost effective and ethical payment solution, and we're looking forward to see it thriving on the European Single Market. Due to its much lower operational costs, GNU Taler is also perfectly suited to handle micro-payments, opening new opportunities for publishers, like selling ebooks or single articles. This deliverable, for PS, was therefore a first practical step in exploring what we — professionals of the independent book sector — can do with GNU Taler.

The original plan within the consortium was that:

- GLS provides a business account to PS
- PS implements Taler payment on the online bookstore
- PS sells books online using Taler payment system
- Books are sold in Euro

Unfortunately, the intended course of events had to adapt to reality.

#### 3.1 Unforeseen Constraints

The original motivation of the consortium was to offer the GNU Taler payment services for the whole Eurozone with a particular emphasis on making the system technically safe while guarding private user data and staying within the legal framework. However, the current deployments cannot offer PS a bank account and/or access to the Taler system due to limitations in the individual service provider's licensing or product structure. Under these circumstances, PS is not legally authorized to, and cannot become a Taler Merchant within the upcoming payment system in Euros by GLS, jeopardizing the original intent, and leaving PS only a few weeks to adjust to a suitable solution for this deliverable after the final negative result from the legal advisors to GLS and discussions within the TALER project.

Moreover, we were not able to find dedicated bookseller software supporting Taler payment APIs, within the technical stack used by PS. Our free software of choice eventually applied to, and was selected for, funding through the TALER Open Calls, but they preferred not to pursue this funding and postponed Taler support to focus on their regular roadmap and more practical matters; although we could have run a temporary server for the purpose of this deliverable, using a existing implementation of Taler, made outside the scope of TALER, we deemed it useless to pursue something that we would not be able to maintain on the long term. Besides, there's already such a demonstrator not using euros but a fictional currency, running at https://demo.taler.net that does not require any setup from customers since it comes pre-configured with Taler software.

#### 3.2 Resolving the Issues

Since we could not achieve our original intent for reasons outside our control, we decided to reduce the scope of the D3.2 demonstrator to something manageable. We sought the Project Officer and offered a leaner version of the original bookseller across the Eurozone, to focus on the implementation of the demonstrator for BOOKZ, a fictional currency distinct from

KUDOS; BOOKZ are designed, similarly to KUDOS, as a fictional currency for the purpose of buying and selling books.

The demonstrator would be integrated with PS online bookstore, so that potential buyers could choose to acquire electronic versions of our books using the Taler payment system.

The demonstrator implements the following GNU Taler components:

- The *libeufin-bank* software;
- The taler-exchange software;
- The taler-merchant-backend software;
- The Taler Point of Sale app for Android;
- The Taler Wallet apps for Android, iOS, or the Web.

The libeufin-bank software, running at https://bank.bookseller.taler.net/, simulates all bank accounts involved in the demo: the customer's bank account, the account for the TALER Bookseller Exchange, and the TALER Merchant's bank account. During the demo, each customer must open a bank account in BOOKZ, to simulate their own bank account in EUR. When the bank account is created, it is automatically credited with a sum of BOOKZ that can be wired to the TALER Bookseller Exchange in order to withdraw TALER BOOKZ tokens in the customer wallet for privacy-preserving payments at the TALER Merchant.

The taler-exchange software, running at https://exchange.bookseller.taler.net, simulates the financial entity that is authorized to accept fiat currency and deliver bearer tokens (so-called digital cash, as it serves the same purpose as paper money: transferring value to the bearer). The Exchange only interacts with the bank(s) and the wallet(s), and remains transparent to the customer outside of the withdrawal operation (turning fiat currency into digital tokens), and to the Merchant during the deposit operation (when the Merchant passes the digital cash to the Exchange in order to be transferred back to fiat currency into their bank account via aggregate wire transfer).

The taler-merchant-backend provides a Web interface to manage an inventory with stocks, products and description. It may be connected to a front-end shopping application such as WooCommerce. The ongoing TALER Open Calls, operated every two months by our partner NLnet, aim to grow the number of software projects integrating Taler payments, that can be found in the Integrations category of TALER ICH, our integration community hub, operated by PS (also known as D3.1).

We tested the sales of electronic version of PS books during the first edition of the *Political Book Fair* in Lille, using the *taler PoS app* for Android. The Point of Sales (PoS) app connects to the Taler Merchant Backend and retrieves the inventory of products, which appears on the screen, divided in categories. For our purpose, PS made a collection-based catalog. Tapping on the collection name, then on the desired product, would add it to the cart. Once the order is ready, the PoS offers two ways of payment:

- flashing a QR code from the Taler Wallet;
- sharing a taler://pay/ link to share via email or a messaging application, for use with the Web version of the Taler Wallet.

In order to pay with Taler, the customer must do two things: install a Taler Wallet and withdraw digital cash.

Each customer must use a Taler Wallet. The wallet app is available for Android and iOS, as well as major web browsers (Chrome/Chromium, Firefox, Opera). The Exodus Privacy website rates Taler Wallet with zero trackers, in accordance with the privacy-by-design and privacy-by-default goals of GNU Taler; this is unlike most other payment apps on Android. Once the wallet is installed, the customer must withdraw BOOKZ (in this demo, this also requires adding the correct Taler Exchange, since each Exchange is currently tied to a single currency: hit the + button and enter 'https://exchange.bookseller.taler.net' for the Exchange URL); the TALER Bookseller Exchange replies with a specially crafted wire order, that the customer can use from their bank account to wire currency to the Taler Exchange; then the Exchange issues tokens and credits them to the Taler Wallet.

In order to withdraw digital cash, customers need to wire money from their bank account to the Taler Exchange for their currency. In this demo, the currency is BOOKZ, therefore customers must have a bank account at https://bank.bookseller.taler.net/.

This bank account will be used during the withdrawal operation that can be initiated from the Taler Wallet. The TALER Bookseller Exchange gives a wire order to the customer, who can then use the bank account to wire the requested amount in BOOKZ currency to the bank account of the Exchange (named 'exchange' in the demo). The wire order contains a cryptographic key that authenticates the operation, ensuring the digital cash go to the right Wallet.

With BOOKZ in their Taler Wallet, customers can buy books from PS!

#### 3.3 D3.2 in Action

The TALER Bookseller demonstrator is fully documented online and integrated in our usual discussion spaces.

Please visit https://bookseller.taler.net

The Appendix below presents screenshots of the various components involved in the demonstrator, means of verification, and relevant pictures.

#### 3.4 Future Work

#### Summary

- 1. Update demo with new releases
- 2. Review documentation
- 3. Increase participation in the documentation
- 4. Integrate with PS bookshop in EUR

Follow up to this report will be available on TALER ICH.

This demonstrator is based on the recently released version 1.0.0 of GNU Taler software. During our research, PS found several occurrences of bugs in the software and the documentation, leading to timely fixes by the development team. PS intends to update the demo as new versions of the software are released, in order to help testing and reporting issues to developers.

The current documentation appears to suffer from rot: some passages, written years ago, may have been obsoleted by newer versions, as discovered during the implementation of this demo. Therefore, PS intends to review documentation to ensure software can be installed without hiccups by following the documented processes, and clarified where confusion may arise from a lack of understanding of the system. With a composable software of that magnitude, discrepancies between code and documentation are bound to happen.

Unfortunately, most software funding focuses on development, and not on maintenance and documentation. Smaller issues in documentation, often hard to impossible to detect, may generate a cascading chain of incurred costs in time and frustration; therefore it's important to ensure highest quality assurance not only for code but also for the documentation. Following the adage "more eyeballs make all bugs shallow", through open debate on https://ich.taler.net/, PS enables anyone in the Taler community, technician or not, to report issues unrelated to code, offering a space for discussion and triage before an eventual escalation to reporting qualified issues to the principal bug tracker of the Taler project at https://bugs.taler.net.

We believe that an inclusive community involving all stakeholders is necessary to fulfill the promise of software freedom and digital sovereignty. We're also confident that developer time is precious and therefore must be shielded from unqualified, time-consuming issues: the conversational nature of a forum complements the mailing-list, providing a curated and searchable facility to discover and resolve common problems. This approach allows more people to participate in curating effective documentation that can eventually integrate the official project documentation.

PS envisions a moment when, once the TALER project is successfully completed and Taler payment in Euro is available across the Eurozone, we can integrate the Bookseller fully with the PS bookstore. This deliverable D3.2 is but a first step on that journey.

# Appendix A

# Screenshots

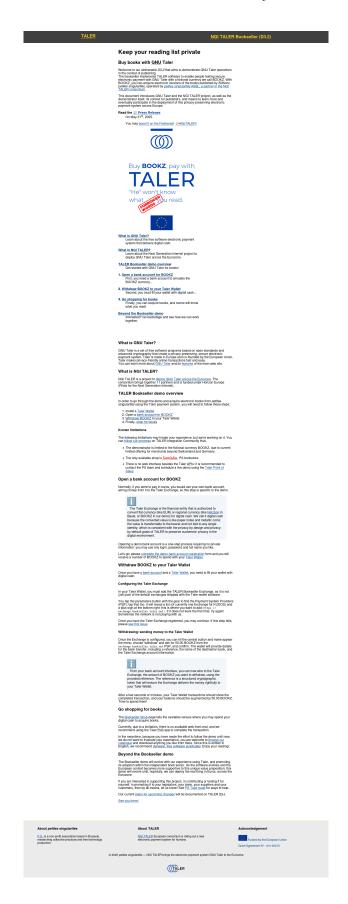


Figure A.0.1: The TALER Bookseller Home Page

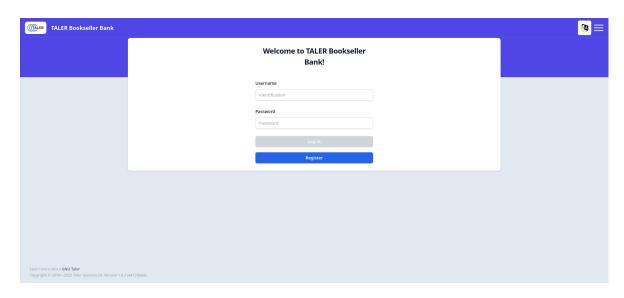


Figure A.0.2: The TALER Bookseller Demo Bank Home Page

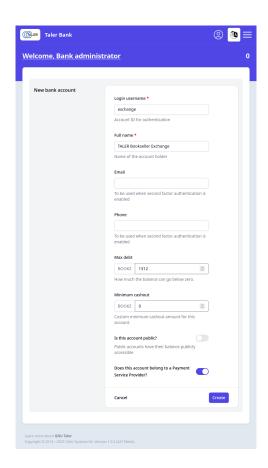


Figure A.0.3: The Taler Exchange bank account must be marked to 'belong to a Payment Service Provider'

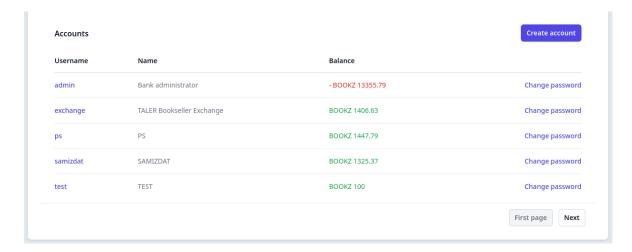


Figure A.0.4: The TALER Bookseller Demo Bank Accounts (admin and Exchange)

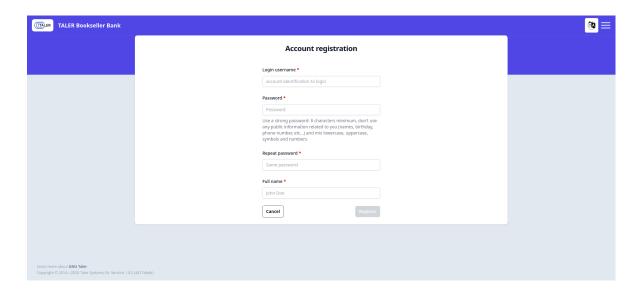


Figure A.0.5: Bank account registration form

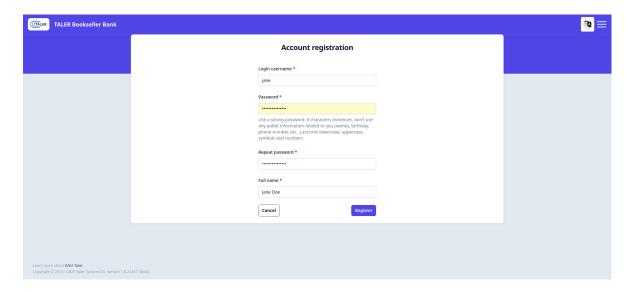


Figure A.0.6: Bank account registration form filled for Jane Doe

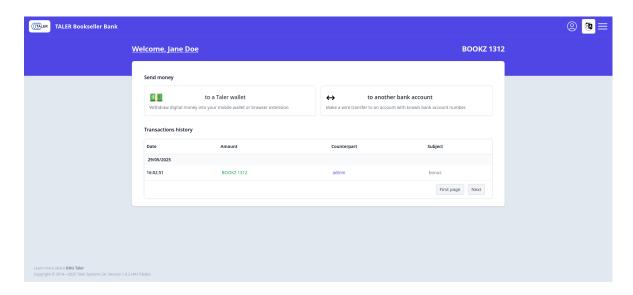


Figure A.0.7: Bank account registered for Jane Doe

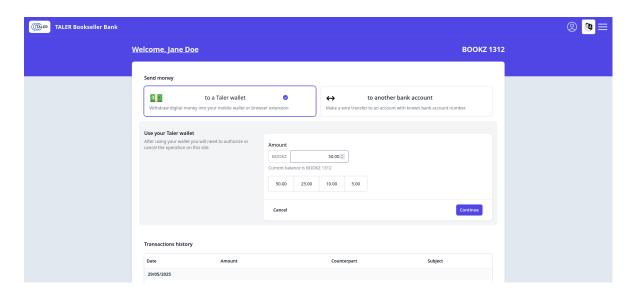


Figure A.0.8: Bank account Jane Doe sends money to her wallet

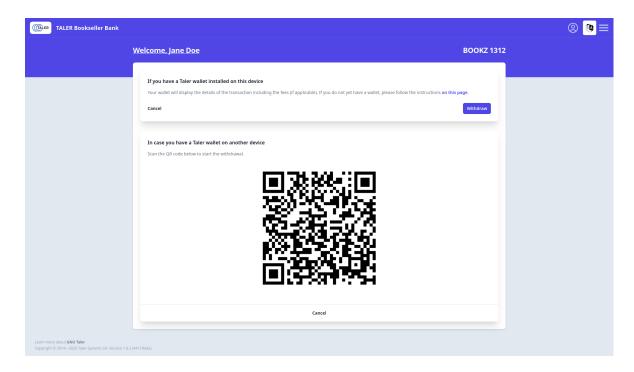


Figure A.0.9: Bank account Jane Doe sends money to her wallet

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Feature	Fee		Until
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history	0.00		01-Jan-2026
purse	0.00		01-Jan-2026
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			Return to wallet

Figure A.0.10: Taler Wallet (web extension) showing information for the BOOKZ Exchange

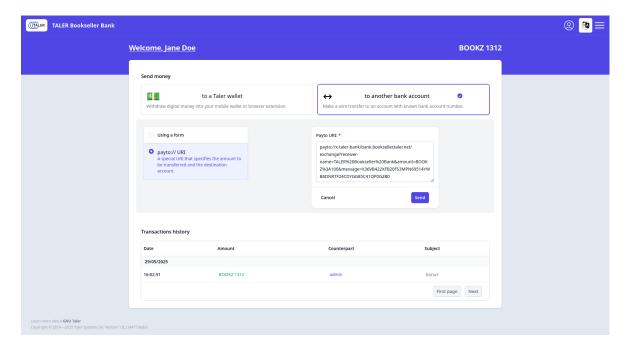


Figure A.0.11: Bank account Jane Doe sends money to the BOOKZ Exchange using a taler://pay/ link



Figure A.0.12: Taler Wallet loading information from Exchange

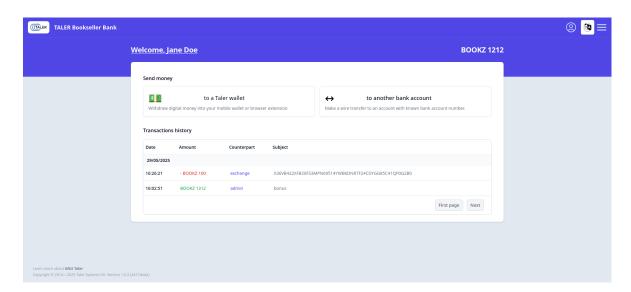


Figure A.0.13: Bank account Jane Doe: the BOOKZ Exchange received money

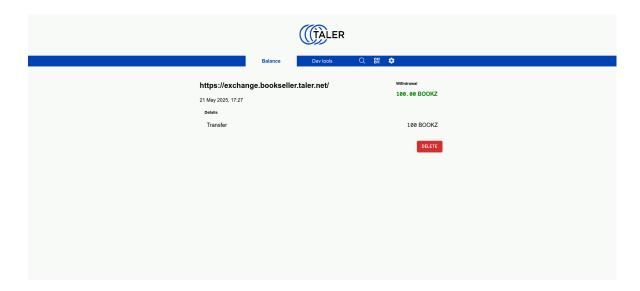


Figure A.0.14: Taler Wallet's balance was updated with the right amount

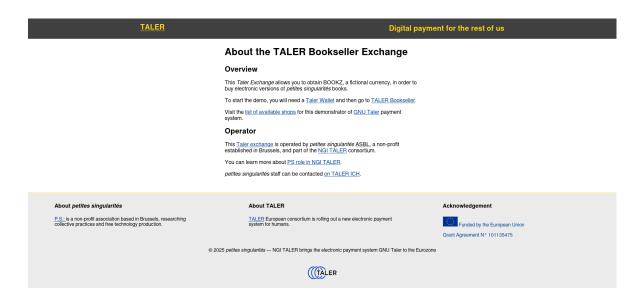


Figure A.0.15: Taler Exchange home page shows Exchange Operator information

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No. 92 03-03-22 taler taler-exchange-https://doi.org/10.1007/03.1007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/03.0007/0
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Figure A.0.16: Taler Exchange is running (viewing KYC logs...)

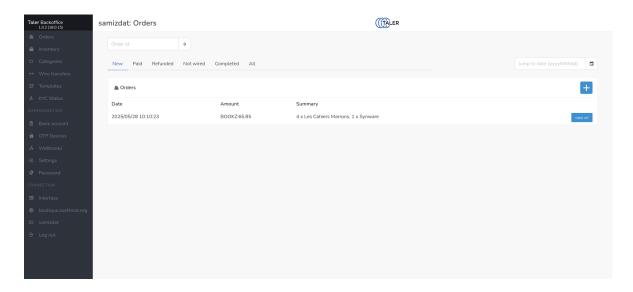


Figure A.0.17: Taler Merchant Backend home page

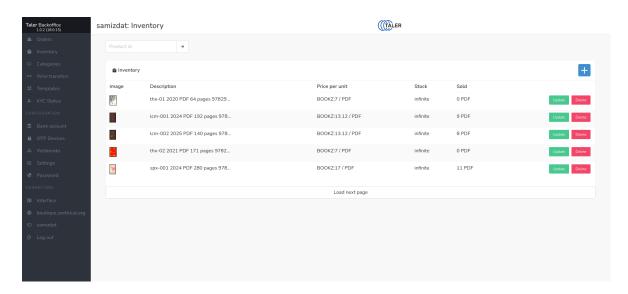


Figure A.0.18: Taler Merchant Backend inventory

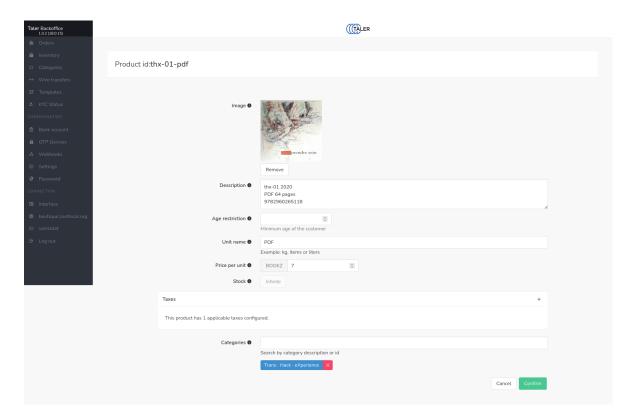


Figure A.0.19: Taler Merchant Backend product view



Figure A.0.20: Testing Taler payment live in Lille

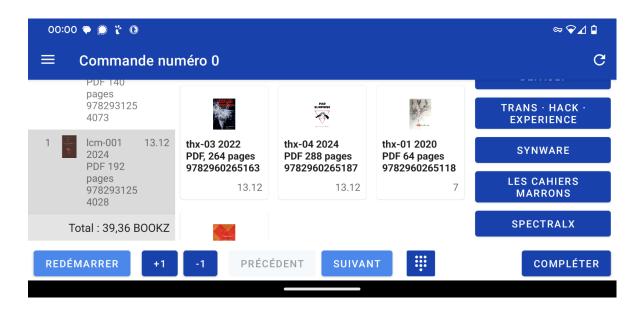


Figure A.0.21: Point of Sale with BOOKZ inventory

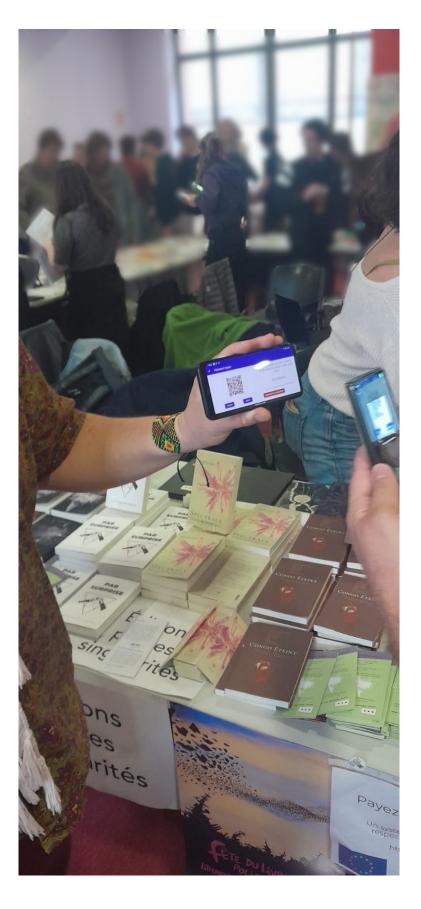


Figure A.0.22: Thank you for buying with GNU Taler!

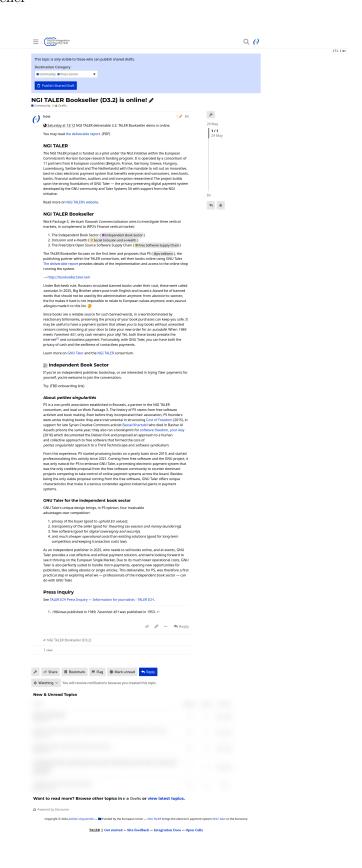


Figure A.0.23: Press Release for D3.2

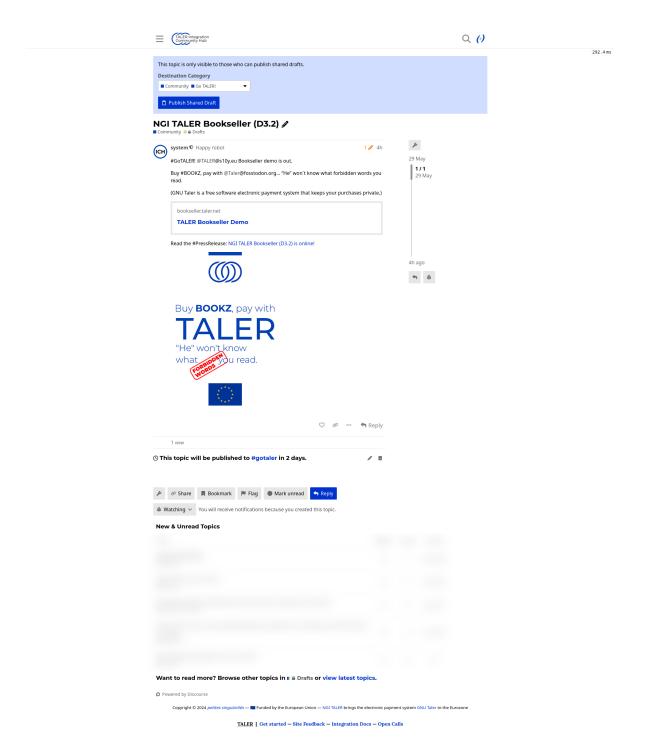


Figure A.0.24: Fediverse announcement for D3.2

### Appendix B

### Final Considerations

The TALER Bookseller is successfully launched by PS, and it will be updated as Taler payments become available in parts of Europe.

The BOOKZ currency showcases that Taler can be used as a viable payments solution, with proper care for anonymity and security of its users, both as merchants and as buyers and that PS has the payment system fully integrated.

The Bookseller implementation also brought attention to the need for documentation updates, making it even easier for other TALER integrations. The independent publishing community is central to the project and the Bookseller implementation can now be reused by other merchants. It is also used by Open Call Grantees who want to test against a production-ready system.