Showcasing Blockchain and iPermissions toolings

Script and working instructions

≡ **Blockchain**	Search				⌾ English			ⓘ 🐦
Invoices	**Type**	**CoC number**	**Reference**	**Submitted**		**Status**	**Signature**	
	Invoice	24210356	16279	15 July 2016 at 16:04:09 GMT+2.584		Notarised	acbb9af5ae3b8f0eb682bc7d7a00f0610d1bc23f55132f829b74c2af9d2	
Blockchain	Invoice	46456006	16569	15 July 2016 at 16:04:08 GMT+2.738		Notarised	73594abad017f5bafa3ae5eb7a496c1598f180daa518a54ca42e5bf19ft	
	Invoice	49040471	16394	15 July 2016 at 16:04:08 GMT+2.372		Notarised	3a383f0e16660d8acd36fb61a3ac94b6eefb2ff8f05ae2104d8c408e232	
Sellers	Collateral	35922562		15 July 2016 at 16:04:07 GMT+2.786		Notarised	f7a3e84dd5d6aaa89fed9357dbce6cdf7c26bce4f8439feb32a1284437	
Buyers	Invoice	11417246	16186	15 July 2016 at 16:04:06 GMT+2.896		Notarised	c5a79c3a5998b66ffc3d1a107f952eb8dc827e1b9676f051dc5a45c107	
	Invoice	25041932	16930	15 July 2016 at 16:04:05 GMT+2.985		Notarised	59528ae0f37040b6ebdb41f80f31ef1bcbfad16f7ce133001f9ff37137cc1	
	Invoice	84552462	16.684	15 July 2016 at 16:04:05 GMT+2.674		Notarised	538c0e18601cbbdbf241b1603c8fe5c6ee4304ce3070903d8f9442036;	
Settings	Invoice revocation	17890002	16.710	15 July 2016 at 16:04:05 GMT+2.324		Notarised	66d67d5d1df465122ff4429e7c19d87d847ed6f15e8494e045e1bdd2ff;	
	Collateral	67146603		15 July 2016 at 16:04:04 GMT+2.945		Notarised	5311a9b4a251b865a09cb207d4ee2df10bb81707ec4b538867f389b4c	
	Invoice	15212331	16877	15 July 2016 at 16:04:04 GMT+2.731		Notarised	e185dfcb5c622d7b87fa1ad3530a3a38f9707fbafcdbbb1be7b28dd974	
	Invoice	20531031	16.725	15 July 2016 at 16:04:04 GMT+2.305		Notarised	f10c4df0900ed23e8eff51c63f1cccb44895b1187f9755f2429123752ef8	
	Invoice	17816393	16.385	15 July 2016 at 16:04:03 GMT+2.515		Notarised	4252ca46fc6796ea6c85cb7b242df87e6f91c50345aa6709d28754bad(	
	Invoice revocation	92932023	16977	15 July 2016 at 16:04:03 GMT+2.16		Notarised	08af728186c05068fbc411f070734e0c346f81a99340780dc41c68de3e	
	Invoice revocation	17657516	16590	15 July 2016 at 16:04:02 GMT+2.870		Notarised	6d3651e062b7a585d5e7c37580bb8a52d58a72e07b96968be4d87d02	
	Invoice revocation	78129872	16.76	15 July 2016 at 16:04:01 GMT+2.961		Notarised	ad2dc07a2875f072df8f2dac7a2d157e3c0665003a3762cd947d0c8a4c	
	Invoice	56198250	16647	15 July 2016 at 16:04:01 GMT+2.934		Notarised	510b4655aeacf933213b7588ce39a8e9d210df0128caca424aa76ea26	
	Invoice	30367061	16744	15 July 2016 at 16:04:00 GMT+2.930		Notarised	367941f2b247b4b0143783615be2a41732b58676f372318485e8	
	Invoice	56201317	16154	15 July 2016 at 16:04:00 GMT+2.854		Notarised	ec3be834efbcb5964e7fd0cb5655a5fabdabde97748f39c05 2f1	

Introduction to demo

This document contains the script outlines and instructions to showcase the Blockchain registry and iPermissions platform (i.e. solutions). Both solutions are developed by Innopay in collaboration with voldaan B.V., Freelance Factoring B.V. and TrefiFinance B.V., as part of the Topsector Logistics program.

Description of solutions:

- *Blockchain Trusted Receivables registry;* application where invoice financing providers can decentralise register receivables to ensure transparency and trust on 'who financed what invoice at what time'. This will prevent 'Double Financing' situations.
- *iPermissions*; platform that offer functionality to set-up connections between SME's and Financier's source systems and digitally exchange information for the purpose of improved finance offerings (i.e. lower cost of finance).

The objective behind these solutions is to improving customer's (i.e. SMEs) access to products, improve risk management, prevent Double Finance and increase the addressable market. In Figure 1 below, the solutions are positioned in the back-end space of finance providers to operate with the Blockchain and Buyer's ERP (i.e. the clients of its clients). Interactions between the Seller and finance providers are out of scope.
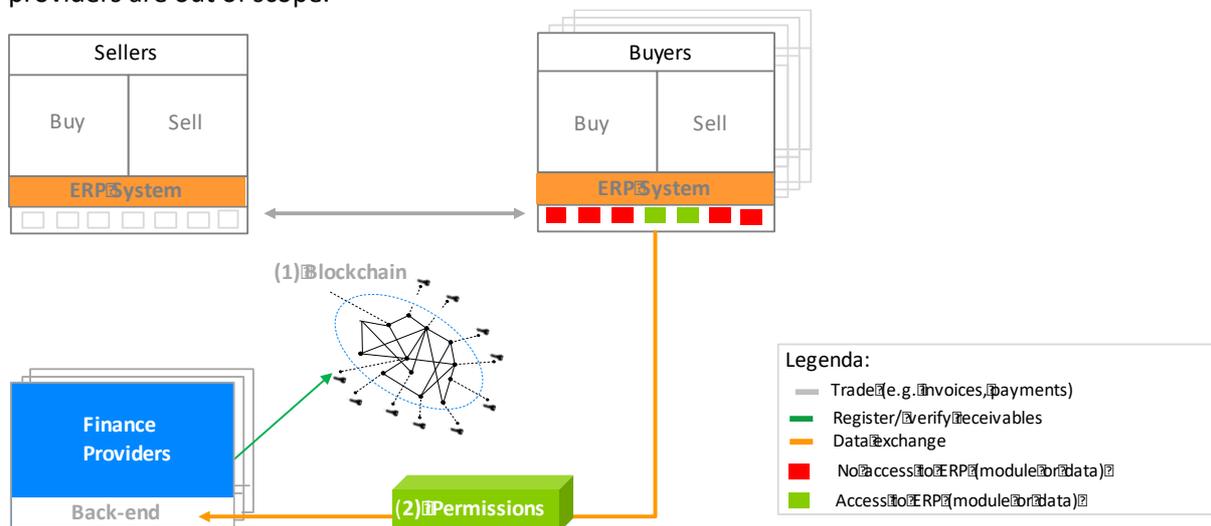

Figure 1: The positioning of the Blockchain (1) and iPermissions (2) finance providers back-end system

The solutions are in prototype stage and operate in a one-off setting (see next chapter). Matured versions should be available to more finance providers and to work with different ERP systems.

Demo goal

By showcasing these solutions to more providers (e.g. banks, Factoring companies, SCF platforms, etc.) new funds and/or in-kind contributions can be raised for valorisation of the concept. In a next

iteration, a coalition of financing providers could develop these prototype solutions into a first release, develop a framework for trust and implement solutions in core processes. Secondly, the prototypes can be used for valorisation in other industries.

Contents of this document include:

1. Script outline
2. Script execution

1. Script outline

The presenter will demonstrate both solutions in a triple role.

1. It will take up the role of 'iFactoring' **(iF)** administrator and handle 3 finance requests from three different Sellers
2. It will play Innopay (i.e. Buyer, **IP**) and use iPermissions to mandate the administrator to connect to its Exact solution. The connection enables iFactoring to track & trace invoice statuses in Innopay's Exact account (=valuable info).
3. And it will play the role of FGA Bank **(FB)**, that will revoke an invoice on the Blockchain that is as of collateral on a loan.
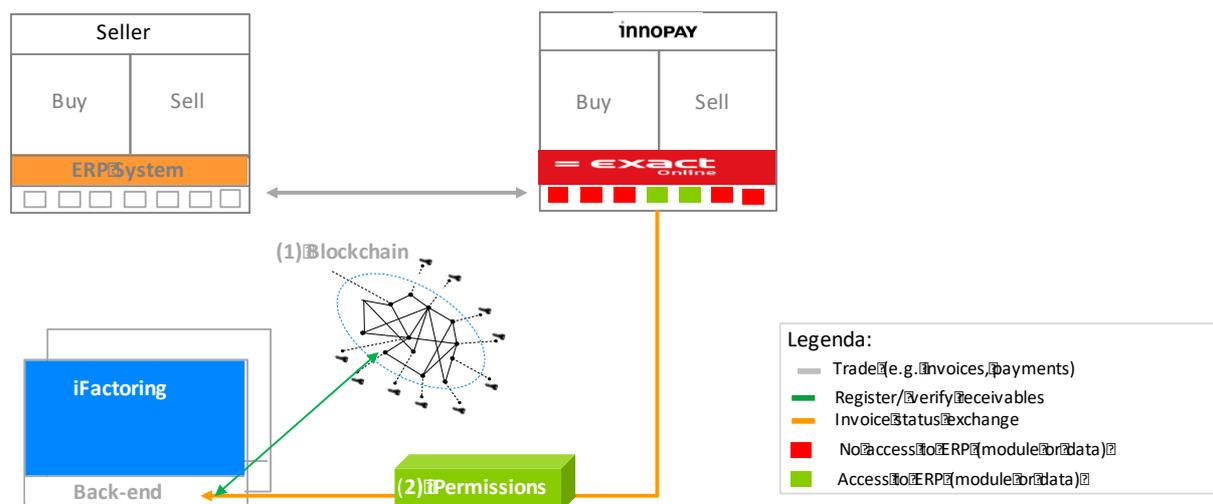
See Figure 2. below.

Figure 2. The cast setting with iFactoring, FGA Bank, Innopay and its ExactOnline (ERP) solution

The presenter demonstrates from the dashboard of back-end system. See Image 1.

There are three scripts that run from this dashboard, each displaying key functionalities of the Blockchain and iPermissions platform. In Table 1 below the three scripts are provided with details on its characters (Seller ID, Buyer ID & credit ratings), key functionalities and the walk-through. More details are provided in Chapter 2.

Script	Seller ID	Buyer ID	Key functionalities	Script walk-through
1) Double Financing attempt	Sifters *(1,5 / 5 star rating)*	N/A	**Double finance** detection by using the **verify** function.	**iFactoring** • Receives request from Sifters • Runs Blockchain to verify whether invoice is already in financial agreement of other provider • The Blockchain detects that Sifters already used this invoice to extract funds from another provider
(2) New Request	Digital Inc. *(4,5 star rating)*	Innopay *(4,5 star rating)*	**Verify** and **notarise receivables.** Set-up connection with **permission protocol** to **track & trace receivables**.	**Interplay: iFactoring (iF) / Innopay (IN)** • **(iF)** Receives a financing request from Digital Inc. • **(iF)** Runs Blockchain to verify whether invoice is already in financial agreement of other provider (no alert) • **(iF)** notarise Digital Inc.'s invoice on the Blockchain • **(iF)** request Innopay to connect to its Exact account • **(IN)** Set privacy settings for iFactoring using iPermissions • **(iF)** Update status of invoice in dashboard to show connection has been set (i.e. invoice approved) • **(IN)** Process invoice to SEPA payment module in Exact • **(iF)** Update status of invoice in dashboard to demonstrate processed to other module
(3)Revoke action	Soda Factory *(4,5 star rating)*	N/A	**Detect receivable** as part of **collateral** on a loan and **revoke** to release for factoring	**Interplay: iFactoring (iF) & FGA Bank (FB)** • **(iF)** Receives request from Soda Factory • **(iF)** Runs the Blockchain and finds that receivable is collateral as part of another financial agreement • **(iF)** informs Seller to do revoke action • **(FB)** Revoke action for Soda Factory, so it can be factored by iFactoring

Table 1. Description of three scripts that are used to demonstrate both applications

In chapter 2.2 the script is described in more details.

2 Script Execution

This chapter describes how the preparation and execution of the script.

2.1 Preparation

Three separate accounts are used in this dem**onstration, and all should be ready in three separate browser** tabs before executing the script**.** Please use the Google Chrome browser

Account	Role	URL	Username	Password
iPermissions	iFactoring	Invoicepermissions.com	xxxx	xxxx
ExactOnline (dummy)	Innopay	Start.exactonline.nl	xxxx	xxxx
Outlook	Innopay	login.microsoftonline.com	Any Innopay account	..

Tabel 1: Account information

Prepare all accounts by using the following check lists.

Checklist iFactoring dashboard:
- First start with resetting the dashboard by using the URL *invoicepermissions.com/reset*
- Now login on URL with username and password (see table 1)
- There should be 5 invoices of 5 different Sellers listed
- The 2nd invoice with reference number […] and its Buyer is ready to be track & traced
- The 5th invoice with reference number […] has been track & traced to the last maturity (i.e. ready for SEPA transaction)

Checklist ExactOnline
- Make sure you are not already in the dummy Exact account or in Innopay's account by checking and logging out
- Check whether the invoices with reference numbers in iFactoring dashboard also exist in the ExactOnline account

Checklist Outlook
- Login with your account
- Make sure your inbox is free of any classified information which can be accidentally shown to the crowd

2.2 Script execution

If all checks are done, please execute the script step-by-step, according to the script.

Scenario I: Double Financing attempt
1. **[iFactoring]** Press 'F' on keyboard
2. **[iFactoring]** Receive request notification from Sifters (1,5 star rating), click on message
3. **[iFactoring]** 'Finance Request' screen opens, with invoiceand seller data filled (ref nr)
4. **[iFactoring]** Press 'Verify' to determine whether this CoC + Ref combination is already used in another transaction on the Blockchain
5. **[iFactoring]** Read message " This invoice is already financed by another node, please notify your client and the Central Authority", the notarize button is blocked
6. **[iFactoring]** Close window with invoice from Sifters

Scenario II: New Request

1. **[iFactoring]** Press 'N' on keyboard
2. **[iFactoring]** Receive invoice notification from Digital Inc., click on message
3. **[iFactoring]** 'Finance Request' screen opens, with invoice reference number [...] and seller data
4. **[iFactoring]** Press 'verify' to determine whether this CoC + Ref combination is already used in another transaction via blockchain
5. **[iFactoring]** Read message "Invoice is open for finance", press notarise to sign the invoice
6. **[iFactoring]** Invoice from Digital Inc now shows up in the table on the dashboard page
7. **[iFactoring]** Press "Request status" on invoice
8. **[iFactoring]** Select a buyer to send the invoice too, and check the permission request email
9. **[Innopay]** Open Outlook and click on the link in the email
10. **[Innopay]** Set permissions for this invoice
11. **[Innopay]** Select *ERP ExactOnline* and press 'Authorise'
12. **[Innopay]** Log in at ExactOnline, and authorise iFactoring
13. **[iFactoring]** Press "Update permission status" on the invoice
14. **[iFactoring]** Show the status on the updated invoice
15. **[Innopay]** In ExactOnline, go to Purchase → purchase invoices → Digital Inc's invoice
16. **[Innopay]** Press "process". The invoice will now be moved to the banking module.
17. **[iFactoring]** In the dashboard, press "update state" on the invoice
18. **[iFactoring]** The status of the invoice has now changed to "SEPA processed"

Scenario III: Revoke action

iFactoring and FGA Bank are shown on separate screens, in parallel. A clear distinction can be made between the two screens (use Blue vs Light Purple).

1. **[iFactoring]** Press 'R' keyboard
2. **[iFactoring]** Receives request notification from Soda Factory, click on message
3. **[iFactoring]** 'Finance Request' screen opens, invoice and seller data is filled
4. **[iFactoring]** Press 'verify' to determine whether this CoC + Ref combination is already used in another transaction via blockchain
5. **[iFactoring]** Message pops up ""This invoice is part of a finance agreement with another node, please notify client"
6. **[iFactoring]** Notarise button is now greyed out
7. **[FGA Bank]** Open on "Collateral" screen with current financing agreement + periods shown
8. **[FGA Bank]** Revoke invoice from Soda Factory by
9. **[iFactoring]** Retry financing invoice from Soda Factory, open "New invoice" screen
10. **[iFactoring]** Verify on blockchain if invoice is available ('revoked')
11. **[iFactoring]** Notarise invoice from Soda Factory

When finished please reset dashboard via
- invoicepermissions.com/reset