

Online Rail Transport Spot Exchange: A first prototype

24 April 2012, Frankfurt

Dipl.-Kfm. René Föhring

Institute of Production and Industrial Information Management

A first prototype

[Login](#) [Register](#)



Welcome to the software prototype of an online rail
transport spot exchange!

WELCOME

You can now login (no sign-up necessary) or create your personal account.

[Login](#) | [Register](#)

Investing in Opportunities



This project has received
European Regional
Development Funding
through INTERREG IV B.



INTERREG IVB

Agenda

1. Background of development
2. Use-Cases and their current implementation
3. Outlook for the future

Who am I?

- software developer
- scientific assistant at the university
- diploma thesis: „Implementation of the software prototype of an online rails transport spot exchange“

Requirements engineering (1/2)

An online spot exchange has to support...

- finding new potential business partners
- matching of supply and demand
- existing business processes

Requirements engineering (2/2)

An online spot exchange has to provide an...

- easily understandable user interface
- interface for third party software

Goals of the prototype (1/2)

The prototype has to...

- implement findings of requirements engineering
- provide usable software
- provide solid framework for further research

Goals of the prototype (2/2)

The prototype has to...

- value functionality, user experience and extensibility
- ignore maintainability and security concerns
- enable a dialog between relevant parties

The result

Dashboard Transport offers Transport requests Companies Stations

New & interesting 6 Demontage Sprenkler AG Martin Sprenkler Logout



Company



Show more options

Create transport offer

Create transport request

Companies

A - Z

Newest first

Favored Companies

Ignored Companies

COMPANIES

Here you can see all companies.

NAME	ZIP	CITY	COUNTRY
Bargelink GmbH	46509	Xanten	Deutschland
Barnett GmbH	54619	Reiff	Deutschland
Berger GmbH	82380	Peißenberg	Deutschland
Breit GmbH	70192	Stuttgart	Deutschland
Brockhaus AG	71717	Beilstein	Deutschland
Burghardt AG	27321	Morsum	Deutschland
Cargo-Trans			Deutschland
Demontage Sprenkler AG	44567	Bochum	Deutschland
Enders GmbH	49762	Fresenburg	Deutschland
Ferstl AG	98528	Suhl	Deutschland
Freight Exchange Service Provider			Deutschland
Fröhlich GmbH	34355	Staufenberg	Deutschland
Gibbs GmbH	21368	Boitze	Deutschland
Glocke GmbH	6369	Großpaschleben	Deutschland
Grote AG	37247	Großalmerode	Deutschland
Hentschel AG	21258	Heidenau	Deutschland
Hinz GmbH	84048	Mainburg	Deutschland
Jäckle GmbH	55566	Bad Sobernheim	Deutschland
Knauer GmbH	39638	Potzehne	Deutschland
Kretschmer AG	56414	Bilkheim	Deutschland
Lorenz GmbH	45326	Essen	Deutschland

Investing in Opportunities

This project has received
European Regional
Development Funding
through INTERREG IV B.

INTERREG IVB

Use-Cases

Users...

- create postings
- lookup postings
- list postings by other companies

Use-Case: Creating a posting

There are two types of postings:

- Offers to transport freight („transport offers“)
- Requests for transportation („transport requests“)

Use-Case: Creating a posting



Users want to...

- signal a business opportunity
- describe the opportunity as good as possible

Use-Case: Creating a posting

[Dashboard](#) [Transport offers](#) **[Transport requests](#)** [Companies](#) [Stations](#)

New & interesting **5** [Demontage Sprenkler AG](#) [Martin Sprenkler](#) [Logout](#)

  [Show more options](#) [Create transport offer](#) [Create transport request](#)

New transport request

NEW TRANSPORT REQUEST

The fields with an asterisk (*) are mandatory.

Contractor
Contractor*

Posting valid until*
(MM/DD/YYYY)

Loading site:

Sidetrack available? ☒ Yes ☐ No

Loading station
Search by number or name

Contractor

Street

(continued)

ZIP

Origin city

Country

Unloading site:

Sidetrack available? ☒ Yes ☐ No

Unloading station
Search by number or name

Contractor

Street

(continued)

ZIP

Destination city

Country

Use-Case: Creating a posting

Steps of creating a posting

- Define basic conditions
- Define details
- Set transparency
- Publish

Use-Case: Creating a posting

NEW TRANSPORT REQUEST

The fields with an asterix (*) are mandatory:

Contractor

Contractor*

Posting valid until*

(MM/DD/YYYY)

Loading site:

Sidetrack available?

☒ Yes ☐ No

Loading station

Search by number or name

Contractor

Street

(continued)

ZIP

Origin city

Country

Germany ▼

Unloading site:

Sidetrack available?

☒ Yes ☐ No

Unloading station

Search by number or name

Contractor

Street

(continued)

ZIP

Destination city

Country

Germany ▼

Investing in Opportunities



This project has received
European Regional
Development Funding
through INTERREG IV B.



INTERREG IVB

Use-Case: Creating a posting

Freight description:

Product name*

State of product* ▼

Harzardous material* ☐ Yes ☒ No

NHM-No.

Total weight (t)*

Timeframe and Transports

Frequency* ▼

Weight per transport (in t)*

Desired means of transport* ▼

Own means of transport present?* ☐ Yes ☒ No

Requirements for means of transport

Requirements for loading of transport

Requirements for unloading of transport

Use-Case: Creating a posting

Requirements for means of transport

Requirements for loading of transport

Requirements for unloading of transport

Desired proposal type* ☐ price per ton ☐ package price ☐ other

Additional information:

Contact Person

Company categories:

- ☐ Railway undertakings
- ☐ Forwarding agents
- ☐ Operators of combined cargo
- ☐ Loading agents

☐

Create Transport request

Use-Case: Looking at a posting

Users want to...

- know the details about your posting
- know who to contact if they need further information

Use-Case: Looking at a posting

Dashboard
Transport offers
Transport requests
Companies
Stations
New & interesting
5
Demontage Sprenkler AG
Martin Sprenkler
Logout

[Show more options](#)
[Create transport offer](#)
[Create transport request](#)

Transport request

[Reply with transport offer](#)
[Contact company](#)

CONTRACTOR: TYLER AG
 Posting valid until 12/19/2012

Tyler AG June 28, 2013 17:59 LOADING SITE	Keller AG January 20, 2014 19:08 UNLOADING SITE
Hamburg Soetenkamp 78 21033 Hamburg Germany	Wohltorf Flaßkuhl 89 21521 Wohltorf Germany
No sidetrack available.	No sidetrack available.
Frequency	monthly
First transport at	07/02/2013

TRANSPORT DESCRIPTION

Product name	Metals
State of product	liquid
Hazardous material	No
Total weight (t)	15000
Weight per transport (in t)	800
Desired means of transport	tank wagon
Own means of transport present?	No
Desired proposal type	package price

CONTACT INFORMATION
[View profile](#)

Deborah Baker

Phone 011-36-67-2672

E-Mail dbaker@schuette.dev

Web <http://www.schuette.dev/team>

COMPANY INFORMATION
[View profile](#)

Schütte GmbH

ZIP 2681

City Wilthen

Country Deutschland

Phone 011-36-67-2670

E-Mail info@schuette.dev

Web <http://www.schuette.dev>

Commercial register entry

-

VAT-No.

-

[View all postings](#)

 © 2012 René Föhring – Institute of Production and Industrial Information Management, University of Duisburg-Essen
 Select language: [Deutsch](#) | [English](#)

Use-Case: Looking at a posting

Transport request

[↗ Reply with transport offer](#)
[➔ Contact company](#)

CONTRACTOR: TYLER AG

Posting valid until 12/19/2012

Tyler AG
June 28, 2013 17:59

LOADING SITE

Hamburg
Soetenkamp 78
21033 Hamburg
Germany

No sidetrack available.

Frequency

First transport at

Keller AG
January 20, 2014 19:08

UNLOADING SITE

Wohltorf
Flaßkuhl 89
21521 Wohltorf
Germany

No sidetrack available.

monthly

07/02/2013

TRANSPORT DESCRIPTION

Product name Metals

State of product liquid

Hazardous material No

Total weight (t) 15000

Weight per transport (in t) 800

Desired means of transport tank wagon

Own means of transport present? No

CONTACT INFORMATION

[View profile](#)

Deborah Baker

Phone 011-36-67-2672

E-Mail dbaker@schuette.dev

Web <http://www.schuette.dev/team>

COMPANY INFORMATION

[View profile](#)

Schütte GmbH

ZIP 2681

City Wilthen

Country Deutschland

Phone 011-36-67-2670

E-Mail info@schuette.dev

Web <http://www.schuette.dev>

Commercial register entry

-

VAT-No.

-

Investing in Opportunities



This project has received
European Regional
Development Funding
through INTERREG IV B.



INTERREG IVB

Use-Case: Listing postings



Users want to...

- be able to list postings from other companies
- filter the resulting listings

Use-Case: Listing postings

[Dashboard](#) [Transport offers](#) **Transport requests** [Companies](#) [Stations](#)

New & interesting **5** [Demontage Sprenkler AG](#) [Martin Sprenkler](#) [Logout](#)











[Show more options](#)[Create transport offer](#)[Create transport request](#)

All transport requests [Switch to transport offers](#)

[Filter by origin ZIP](#)[Filter by destination ZIP](#)

ALL TRANSPORT REQUESTS

Here you can see all the transport requests.

NUMERIC ID	ORIGIN	DESTINATION	FIRST TRANSPORT AT	FREQUENCY	COMPANY
 #N.000.508	Finsing	Raubling	10/17/2012	once	Demontage Sprenkler AG
 #N.000.506	Arzberg	Rippershausen	10/11/2012	monthly	Demontage Sprenkler AG
 #N.000.507	Volkenschwand	Schäftlarn	12/24/2012	weekly	Demontage Sprenkler AG
 #N.000.501	Bocholt	Pohl	01/21/2013	once	Schütte GmbH
 #N.000.502	Gallmersgarten	Bad Schussenried	08/11/2012	once	Schütte GmbH
 #N.000.503	Hamburg	Wohltorf	07/02/2013	monthly	Schütte GmbH
 #N.000.504	Neukamperfehn	Breuberg	06/08/2013	weekly	Salazar AG
 #N.000.505	Baslheim	Breuberg	03/20/2013	monthly	Jackle GmbH
 #N.000.499	Kelheim	Sehnde	02/07/2013	once	Brockhaus AG
 #N.000.500	Mörschied	Hanau	06/19/2013	once	Schaub AG

© 2012 René Föhring – Institute of Production and Industrial Information Management, University of Duisburg-Essen
[Imprint](#) | [Contact](#)

Select language: [Deutsch](#) | English

Investing in Opportunities



This project has received
European Regional
Development Funding
through INTERREG IV B.



INTERREG IVB

Use-Case: Listing postings











All transport requests [Switch to transport offers](#)

Filter by origin ZIP

Filter by destination ZIP

ALL TRANSPORT REQUESTS

Here you can see all the transport requests.

NUMERIC ID	ORIGIN	DESTINATION	FIRST TRANSPORT AT	FREQUENCY	COMPANY
 #N.000.508	Finsing	Raubling	10/17/2012	once	Demontage Sprenkler AG
 #N.000.506	Arzberg	Rippershausen	10/11/2012	monthly	Demontage Sprenkler AG
 #N.000.507	Volkenschwand	Schäftlarn	12/24/2012	weekly	Demontage Sprenkler AG
 #N.000.501	Bocholt	Pohl	01/21/2013	once	Schütte GmbH
 #N.000.502	Gallmersgarten	Bad Schussenried	08/11/2012	once	Schütte GmbH
 #N.000.503	Hamburg	Wohltorf	07/02/2013	monthly	Schütte GmbH
 #N.000.504	Neukamperfehn	Breuberg	06/08/2013	weekly	Salazar AG
 #N.000.505	Bastheim	Breuberg	03/20/2013	monthly	Jäckle GmbH
 #N.000.499	Kelheim	Sehnde	02/07/2013	once	Brockhaus AG
 #N.000.500	Mörschied	Hanau	06/19/2013	once	Schaub AG

Use-Case: Listing postings

Users can filter listings by

- date
- originating station/city/zip-code
- destined station/city/zip-code
- full-text search
- company

Use-Case: Listing postings











All transport requests [Switch to transport offers](#)

Filter by origin ZIP

Filter by destination ZIP

ALL TRANSPORT REQUESTS

Here you can see all the transport requests.

NUMERIC ID	ORIGIN	DESTINATION	FIRST TRANSPORT AT	FREQUENCY	COMPANY
 #N.000.508	Finsing	Raubling	10/17/2012	once	Demontage Sprenkler AG
 #N.000.506	Arzberg	Rippershausen	10/11/2012	monthly	Demontage Sprenkler AG
 #N.000.507	Volkenschwand	Schäftlarn	12/24/2012	weekly	Demontage Sprenkler AG
 #N.000.501	Bocholt	Pohl	01/21/2013	once	Schütte GmbH
 #N.000.502	Gallmersgarten	Bad Schussenried	08/11/2012	once	Schütte GmbH
 #N.000.503	Hamburg	Wohltorf	07/02/2013	monthly	Schütte GmbH
 #N.000.504	Neukamperfehn	Breuberg	06/08/2013	weekly	Salazar AG
 #N.000.505	Bastheim	Breuberg	03/20/2013	monthly	Jäckle GmbH
 #N.000.499	Kelheim	Sehnde	02/07/2013	once	Brockhaus AG
 #N.000.500	Mörschied	Hanau	06/19/2013	once	Schaub AG

Investing in Opportunities



This project has received
European Regional
Development Funding
through INTERREG IV B.



INTERREG IVB

Use-Case: Listing postings

All transport requests [Switch to transport offers](#)

Filter by origin ZIP

Filter by destination ZIP

ALL TRANSPORT REQUESTS

Here you can see all the transport requests.

NUMERIC ID	ORIGIN	DESTINATION	FIRST TRANSPORT AT	FREQUENCY	COMPANY
 #N.000.504	Neukamperfehn	Breuberg	06/08/2013	weekly	Salazar AG
 #N.000.505	Bastheim	Breuberg	03/20/2013	monthly	Jäckle GmbH

Use-Case: Listing postings











All transport requests [Switch to transport offers](#)

Filter by origin ZIP

Filter by destination ZIP

ALL TRANSPORT REQUESTS

Here you can see all the transport requests.

NUMERIC ID	ORIGIN	DESTINATION	FIRST TRANSPORT AT	FREQUENCY	COMPANY
 #N.000.508	Finsing	Raubling	10/17/2012	once	Demontage Sprenkler AG
 #N.000.506	Arzberg	Rippershausen	10/11/2012	monthly	Demontage Sprenkler AG
 #N.000.507	Volkenschwand	Schäftlarn	12/24/2012	weekly	Demontage Sprenkler AG
 #N.000.501	Bocholt	Pohl	01/21/2013	once	Schütte GmbH
 #N.000.502	Gallmersgarten	Bad Schussenried	08/11/2012	once	Schütte GmbH
 #N.000.503	Hamburg	Wohltorf	07/02/2013	monthly	Schütte GmbH
 #N.000.504	Neukamperfehn	Breuberg	06/08/2013	weekly	Salazar AG
 #N.000.505	Bastheim	Breuberg	03/20/2013	monthly	Jäckle GmbH
 #N.000.499	Kelheim	Sehnde	02/07/2013	once	Brockhaus AG
 #N.000.500	Mörschied	Hanau	06/19/2013	once	Schaub AG

Use-Case: Listing postings

Schütte GmbH

[Transport offers](#)[Transport requests](#)[Profile](#)[Write a review!](#)[Subscribe to company](#)[Ignore company](#)

ALL TRANSPORT REQUESTS

Here you can see all the transport requests.

NUMERIC ID	ORIGIN	DESTINATION	FIRST TRANSPORT AT	FREQUENCY	COMPANY
 #N.000.501	Bocholt	Pohl	01/21/2013	once	Schütte GmbH
 #N.000.502	Gallmersgarten	Bad Schussenried	08/11/2012	once	Schütte GmbH
 #N.000.503	Hamburg	Wohltorf	07/02/2013	monthly	Schütte GmbH

Investing in Opportunities



This project has received
European Regional
Development Funding
through INTERREG IV B.



INTERREG IVB

More Features

Notifications

- about relevant postings (by email)
- users define rules

Rate business partners

- based on performance
- reviews appear on profile

Outlook for the future (1/2)

What do we have?

- Solid foundation
- Lots of potential
- But just a first prototype
- Not a final product

Outlook for the future (2/2)

What do we need?

- Further research and development
- Dialog between researchers, industry experts and software engineers
- Professional re-implementation

The prototype is available today!

Try the latest version of the prototype:

<http://pim-code24.wiwinf.uni-due.de/>

Download the source code of the prototype:

<https://github.com/rrrene/code24-exchange>

Feel free to contact me

Dipl.-Kfm. René Föhring

E-Mail: rene.foehring@pim.uni-due.de

Web: www.pim.wiwi.uni-due.de/team/rene-foehring/