

Port of Koper

E-Container System Concept

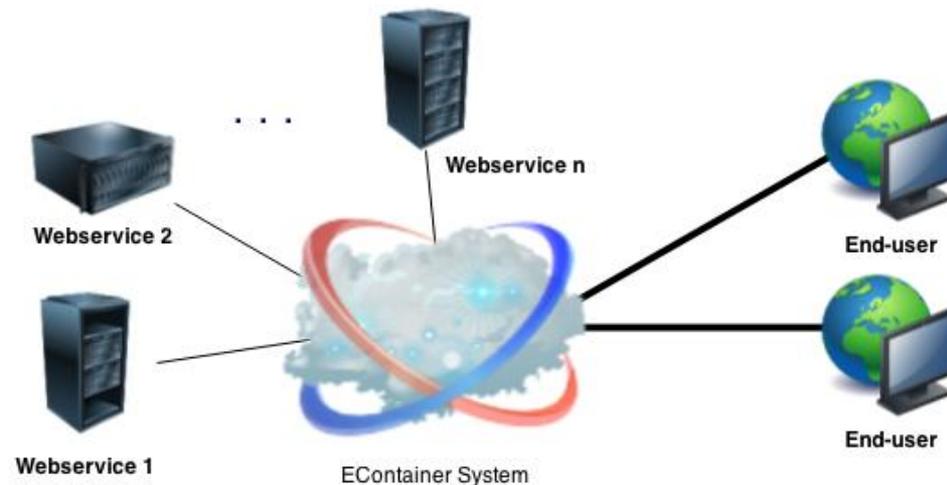


Table of contents

- Introduction
- E-Container System Concept
- Implementation of the LK Web Service
- Different Test Cases
- Live Demonstration of the concept
- Final words

Goal of the project

- A cloud-based system, accessible to everyone
- Granting reliable and working services from partners to end-users
- Service that collects information from other web services
- E-Container System



E-Container System Concept

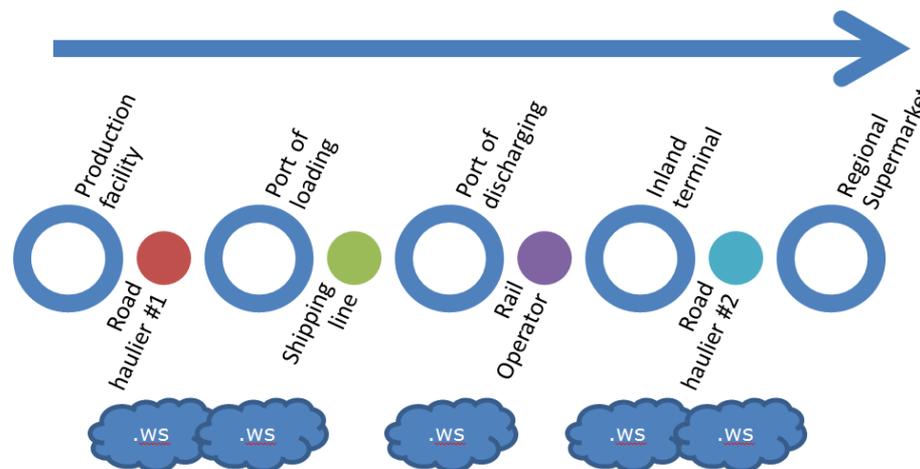
Definition

- A concept of the E-Container System has been developed
- Required attributes for the E-Container System Concept:
 - Status (Status „In Transit“ added in v1.1.)
 - Container ID
 - Title
 - Datetime or Timestamp
 - Location
 - Transport type
 - MRN and IMDG number
 - Destination

E-Container concept

Definition

- Definition of the services in this business case:
 - **Road haulier #1:** .ws for the status: pick up delivery Container
 - **Port of Loading:** .ws for statuses: gate in, yard, vessel out
 - **Port of Destination:** .ws for statuses: vessel in, yard, rail out
 - **Inland terminal/Distribution Center:** .ws for statuses: rail in, yard, gate out
 - **Road haulier #2:** .ws for the status: delivery to the final destination

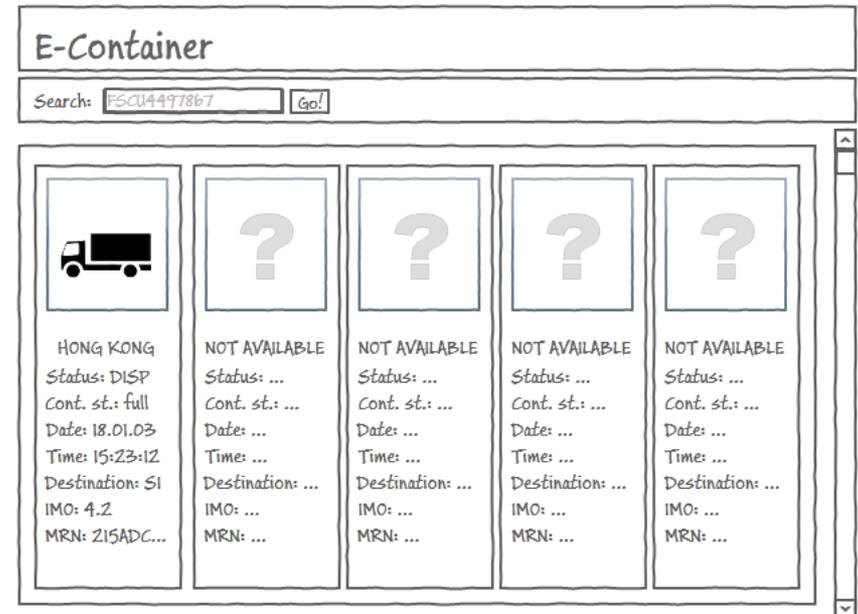


Results

- E-Container System makes multiple requests to different tracking and tracing services (webservices)
- Results are presented as:
 - A string message
 - An encoded JSON format
 - An encoded XML format

Sketch of the end-user interface

- A search filed – container ID
- A result container box for data received from each service



Implementation

- A secure web service has been developed
 - Allowing external sites to make a data query (Port of Koper Mobile App)
 - Providing customers with real time access into the Koper TOS Mainsail database in order to receive the current status of the container
- The query result – an XML string:

```
<container id="FSCU4497867">  
  <status>true</status>  
  <move>out</move>  
  <cont_status>full</cont_status>  
  <title>PORT OF KOPER</title>  
  <datetime>2012-05-25T04:27:12</datetime>  
  <location>Koper</location>  
  <destination>Munchen</destination>  
  <transport_type>truck</transport_type>  
  <imo>4.1</imo>  
  <mrn>13HU71100023D87D18</mm>  
</container>
```

Port of Koper Mobile Application

- „Port of Koper“ app
- <http://app.luka-kp.si>
- Available for iOS, Android and Windows Phone

4:20 PM

E-Container

Use the E-Container web service to track and trace the status of a container in our Port of Koper. The needs internet connection. Slow connection may cause slow response in showing the results

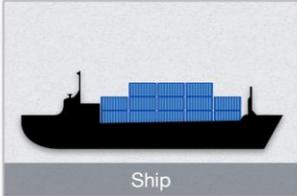
Search form:

Container ID: DGG5S99JTG4 Search

Results

Arrival

Move:	IN
Date:	19.12.2012 15:54:23
Status:	Dry
Carrier:	KPKJ930
Line:	MSC
Order no.:	3004338
Release:	False
Seal:	EU0000972501



Ship

▼ **Port operations:** Delivery Full, In From Stripping, Delivery Empty, In From Stuffing ▼

Departure

Move:	OUT
Date:	121.12.2012 15:24:23
Status:	Dry
Carrier:	MURU
Line:	MSC
Order no.:	3004588
Release:	False
Seal:	EU0000972501



Train

Test case 1 – Best case



E-CONTAINER *DEMO*
1.0



Search:

Insert container ID.

Test case 1 – Best case

Search: HLXU5657330 Next step

WEBSERVICE 1	WEBSERVICE 2	WEBSERVICE 3	WEBSERVICE 4	WEBSERVICE 5
				
NYK Logistics Status: Dispatched Date: 16/09/2013 Time: 11:23:17 Destination: Port of Tokyo IMDG: Not Hazardus MRN: -	- Status: - Date: - Time: - Destination: - IMDG: - MRN: -			

Test case, step 1

- Results from the first service – pick up Delivery Container

Test case 1 – Best case

Search: HLXU5657330 Next step

WEBSERVICE 1	WEBSERVICE 2	WEBSERVICE 3	WEBSERVICE 4	WEBSERVICE 5
				
NYK Logistics Status: Dispatched Date: 16/09/2013 Time: 11:23:17 Destination: Port of Tokyo IMDG: Not Hazardus MRN: -	Port of Tokyo Status: Dispatched Date: 16/09/2013 Time: 11:23:40 Destination: Port of Koper IMDG: Not Hazardus MRN: -	- Status: - Date: - Time: - Destination: - IMDG: - MRN: -	- Status: - Date: - Time: - Destination: - IMDG: - MRN: -	- Status: - Date: - Time: - Destination: - IMDG: - MRN: -

Test case, step 2

- Results from the second service – Gate In

Test case 1 – Best case

Search: Next step

WEBSERVICE 1	WEBSERVICE 2	WEBSERVICE 3	WEBSERVICE 4	WEBSERVICE 5
				
NYK Logistics Status: Dispatched Date: 16/09/2013 Time: 11:23:17 Destination: Port of Tokyo IMDG: Not Hazardus MRN: -	Port of Tokyo Status: Dispatched Date: 16/09/2013 Time: 13:17:03 Destination: Port of Koper IMDG: Not Hazardus MRN: -	- Status: - Date: - Time: - Destination: - IMDG: - MRN: -	- Status: - Date: - Time: - Destination: - IMDG: - MRN: -	- Status: - Date: - Time: - Destination: - IMDG: - MRN: -

Test case, step 3

- Results from the second service – Yard



Test case 1 – Best case

Search: Next step

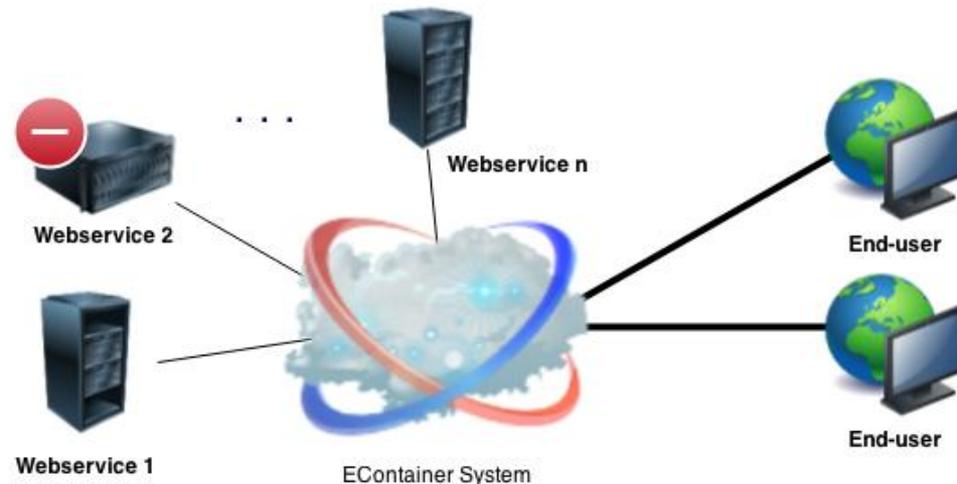
WEBSERVICE 1	WEBSERVICE 2	WEBSERVICE 3	WEBSERVICE 4	WEBSERVICE 5
				
NYK Logistics	Port of Tokyo	Evergreen	Port of Koper	Euro Pacific Transport
Status: Dispatched Date: 16/09/2013 Time: 11:23:17 Destination: Port of Tokyo IMDG: Not Hazardus MRN: -	Status: Dispatched Date: 17/09/2013 Time: 16:04:02 Destination: Port of Koper IMDG: Not Hazardus MRN: -	Status: Dispatched Date: 23/10/2013 Time: 07:03:12 Destination: Port of Koper IMDG: Not Hazardus MRN: -	Status: Dispatched Date: 24/10/2013 Time: 14:12:11 Destination: DC IPBO IMDG: Not Hazardus MRN: 16HUW1120421D89D2F	Status: Delivered Date: 24/10/2013 Time: 18:17:31 Destination: DC IPBO IMO: Not Hazardus MRN: 16HUW1120421D89D2F

Test case, step 9

- Results from the last service – delivery to the final destination

Test case 2 – Bad case

- What happens when different webservices are offline or do not have the needed information?



Test case 2 – Bad case



WEBSERVICE 1	WEBSERVICE 2	WEBSERVICE 3	WEBSERVICE 4	WEBSERVICE 5
				
Intereuropa Status: Dispatched Date: 01/09/2013 Time: 16:14:23 Destination: Zahony Terminal IMDG: Not Hazardus MRN: -	Zahony Terminal Status: Dispatched Date: 02/09/2013 Time: 19:03:45 Destination: Port of Koper IMDG: Not Hazardus MRN: -	Express Interfracht Status: Dispatched Date: 04/09/2013 Time: 14:18:42 Destination: Port of Koper IMDG: Not Hazardus MRN: -	- Status: - Date: - Time: - Destination: - IMDG: - MRN: -	- Status: - Date: - Time: - Destination: - IMDG: - MRN: -

WEBSERVICE 6	WEBSERVICE 7
	
- Status: - Date: - Time: - Destination: - IMDG: - MRN: -	Transport Haulier Status: Delivered Date: 16/10/2013 Time: 14:38:21 Destination: Intel Corporation IMO: Not Hazardus MRN: 1GDY2548UDHJ23422F



Live Demonstration of the Concept

- DEMO

- Benefits from the E-Container System
 - Fast access to data provided by different services
 - All data collected in one place
 - Easy to track container status and position
- Concerns about the E-Container System
 - Missing webservices (hauliers, shipping lines, operators, terminals, etc.)
 - Additional „Route descriptor“ is required to resolve time synchronization problems
 - This business case is very optimistic
 - Big transport hauliers already have their own tracking systems