TRANSPORT MANAGEMENT

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Based ADempiere Fleet Management by e-Evolution SC

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1   Background

Transport Management is the plugin for iDempiere Business Suite ERP/CRM/SCM which can help you consolidate Purchase, Sale and Distribution orders and maximize the return on your transportation spend and enhance freight, fleet, and logistics management.
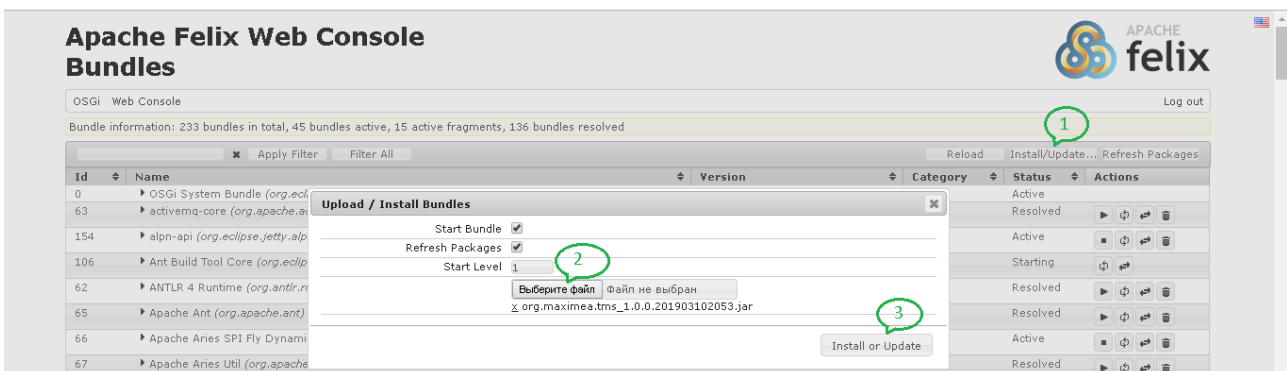
*P.S. This version 1.02(alfa) published without support PostGIS&pgRouting.*

2   Install

2.1 Download and Install plugin

You can download the TMS plugin plugin for immediate use in your latest iDempiere from https://bitbucket.org/pshepetko/org.maximea.tms/downloads/

In Apache Felix Web Console: 1) Install plugin 2) Select file 3) Install and Update

As result must be Status=Active
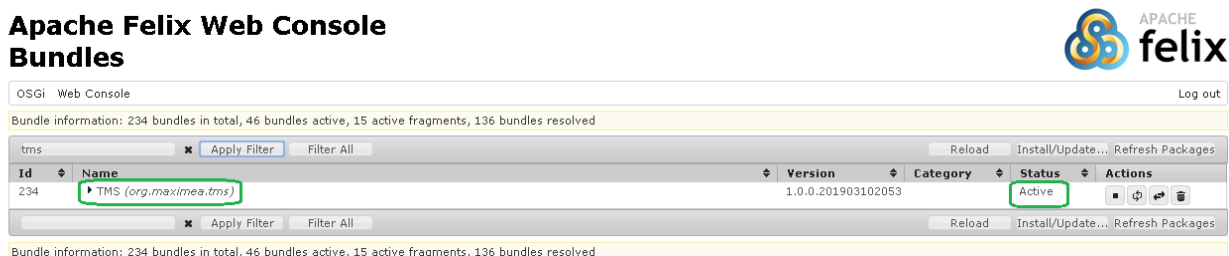
After that you can use this functionality.

2.2 Setting

2.2.1 Transport Unit Type

Transport unit types are a means of grouping together different transport units according to certain characteristics.

2.2.2 Transportation Unit

Freight Unit is a set of goods that are transported together across the entire transportation chain. A freight unit can include transportation constraints for transportation planning.

Create Transportation Unit name Freight Unit and set Volume, Dimension and Weight and etc.

Add Compartment for this TU if need, example hot, cold, frozen and etc.

2.2.3   Compartment

You use compartments to map the loading space.

	Organization	Search Key	Name	Description	Transport Compatibility Group	Maximum Volume	Minimum Volume	Volume Unit of Measure	Active
	mainKitchen	nothing	Nothing		Nothing	5.0	1.0	Metr3	☑
	mainKitchen	hot	Hot Box		Hot boxes	5.0	1.0	Metr3	☑
	mainKitchen	cold	Cold box		Cold boxes	5.0	1.0	Metr3	☑
	mainKitchen	frozen	Frozen box		Frozen	5.0	1.0	Metr3	☑

Create Compartment if need to split TU

Client	myMeals.DEMO
Organization	mainKitchen
Search Key	nothing
Active	☑
Name	Nothing
Description	
Document Note	
Comment/Help	
Transport Compatibility Group	Nothing
Volume Unit of Measure	Metr3
Minimum Volume	1.0
Maximum Volume	5.0

For example you use compartments for the following:

You have to separate two freight units on a truck because they contain refrigerated goods and fruit.

2.2.4 Vehicles

You define vehicles for transportation.

Set Volume, Dimension, Weight and etc.

2.2.5 Drivers

You define Drivers and Licenses for transportation.

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2.2.6   Product

For planning you must set Weight and Volume .

And if you want o use Compartment you can use field Freight Category.

2.2.7   Business Partner Location

Business Partner must have Address for view route on the Map.

Sales Region need for routes grouping if you use Multi Stops.

2.2.8   Freight Costing Calculate Definition

2.2.8.1   Freight Calculation Method Window

This definition enables the system to calculate transportation charges according to a specific logic, for example, by considering the Weight or the Length of route.

2.2.8.2   Calculation Method Type

You can choose the type of calculation method to use for each charge. The following calculation method types we can add and use:

You can create and select Charge for each Calculation Method Type. As example Charge=Freight Fuel for Freight Calculation Method Type=Fuel Surcharge (FS)

●Standard - Weight

The system calculates the transportation charges based on the specified rate, calculation rule, and actual weight. For example, the rate is USD 10 and the calculation rule specifies that the rate is for every 100 kg. The weight is 1800 kg, so the system calculates the transportation charges as USD 180 (1800 kg/100 kg * USD 10).

● Standard - Length

The system calculates the transportation charges based on the specified rate, calculation rule, and actual length. For example, the rate is USD 10 and the calculation rule specifies that the rate is for every 100 km. The weight is 1000 km, so the system calculates the transportation charges as USD 100 (1000 kg/100 kg * USD 10).

● Break-Weight

The system calculates the transportation charges by comparing and selecting the lower rate from either the actual rate range or the lower end of the next rate range. Break-weight is the weight from which it is cheaper to calculate the rate as opposed to the actual weight of the goods to be transported. One of the scales in the rate must be weight.

● Clipping

The system calculates the transportation charges by working through all scales level-by-level, even if the value lies outside the scale. The system then totals up the calculation results from each scale level to produce the overall result. For clipping, one scale item must have a relative calculation type.

● Deficit weight rating

The system calculates the transportation charges for a weight greater than the actual weight of the goods to be transported, if it results in a lower transportation charge. The system calculates the difference between the actual weight and the next scale level and adds this difference to the goods to be transported as a deficit weight. The system then calculates the costs for the deficit weight using the cheaper rate. Deficit weight rating (DWR) is primarily used in U.S. land transportation.

● External system

The system connects to an external system to determine the rates.

● Other Calculation Method Type

Your custom Calculation Method Type

More details about Calculation Methods you can see on the SAP TMS manual.

2.2.8.3 Freight Agreement

You can use the following Calculation Methods to Freight Cost Calculation.

●Example for Shipper 1
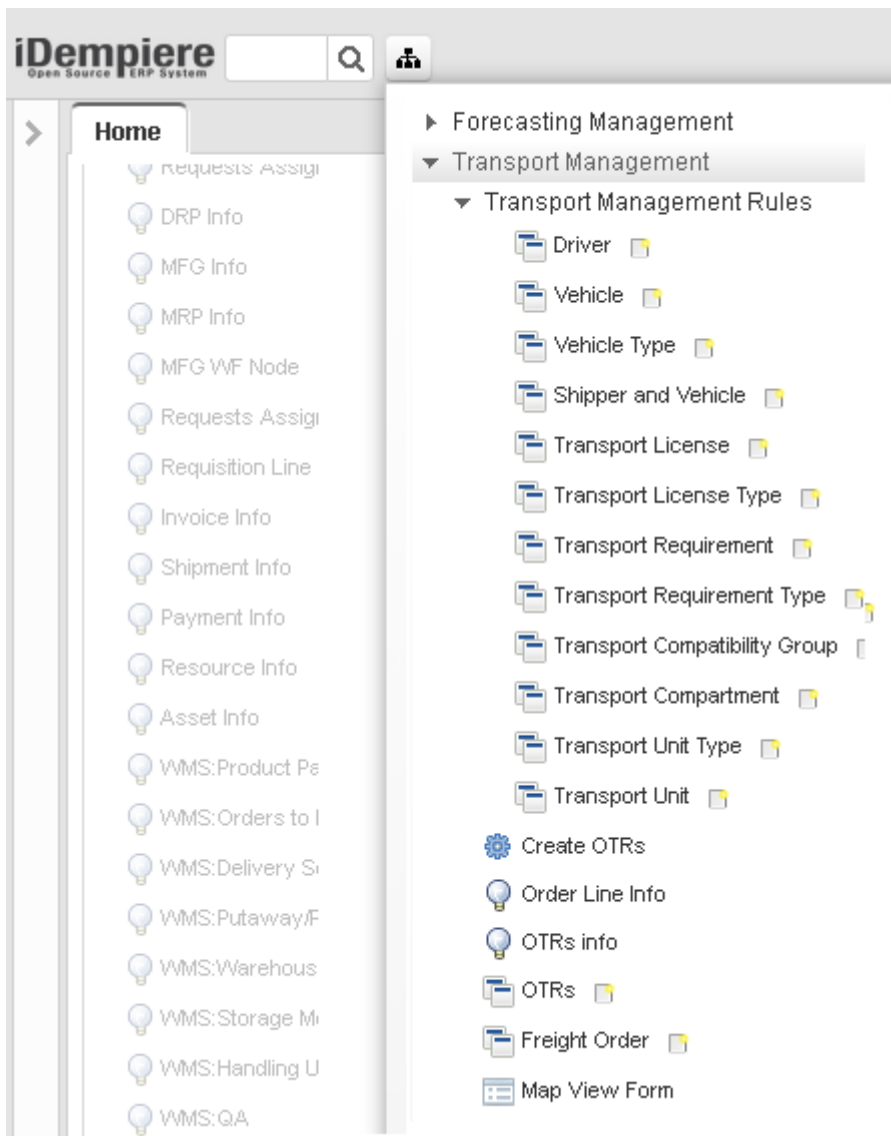

xample for Shipper 2

●Example for Shipper 3

Note that you can use many Calculation Methods on Freight Agreements for one Shipper.

The next Step Run Freight Cost Calculation Process for calculation.

# 3 Transport Management functionality

3.1 Overview

Transportation Management System (TMS) is a plugin for iDempiere Business Suite ERP/CRM/SCM. TMS Solution has been designed for transportation and logistics requirement of all industries and helps them to reduce transportation costs and improve logistics efficiency and flexibility.

TMS plugin enables you to manage all inbound and outbound domestic and international freight in the same environment and provides traceability and visibility of orders, shipments, items, and logistics processes.

With TMS plugin, you can plan the transportation of shipments for many common order types such as sales and purchase orders, returns, and stock transfers.

3.2 Business Process
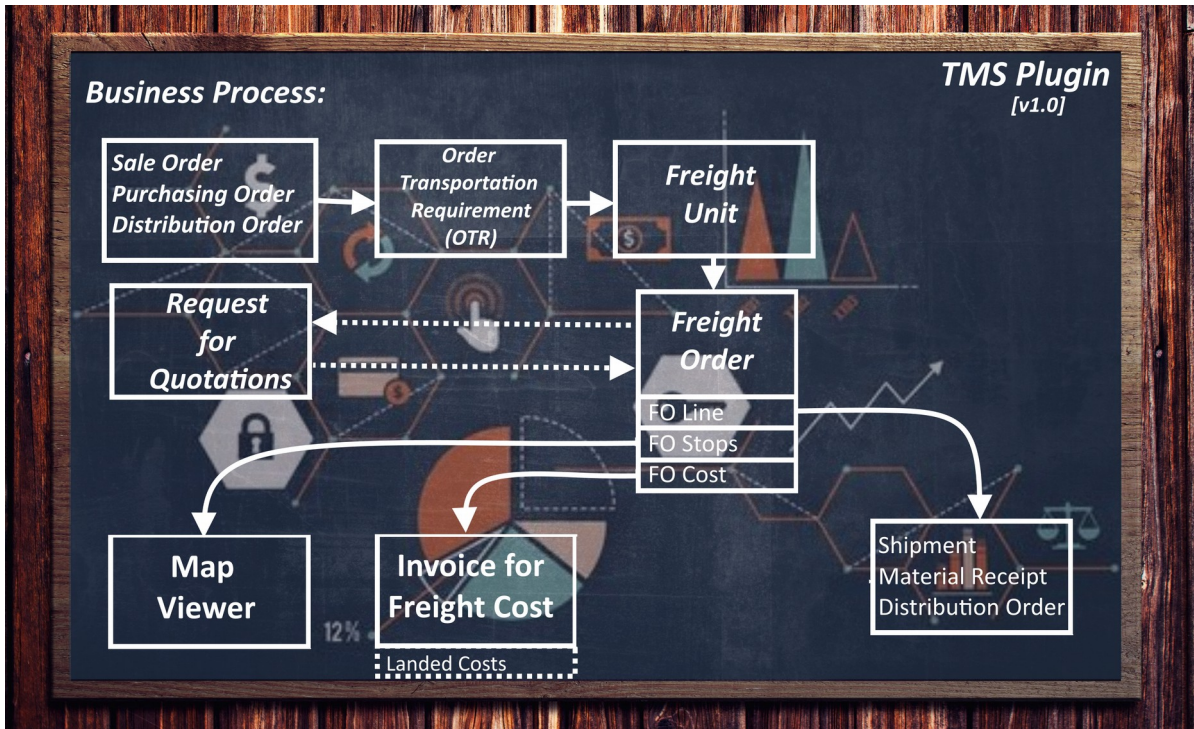
3.3 Create OTRs process

Run process for create Order Transportation Requirements (OTR) from

- Sales Order

- Purchasing order

- Distribution Order

You can delete old/existing records if need.

Result of process for tree months.

3.4 Order Transportation Requirement Info Window

Here you can see OTR records and run processes for selected records.

3.4.1 OTR Window

Use doble-click you can see OTR Window.

3.4.2 Create Freight Units

This process Create Freight Units based selected Transport Unit for selected records of grid (when parameter Date promised is empty).But if you entered parameter Date promised that process run for period.
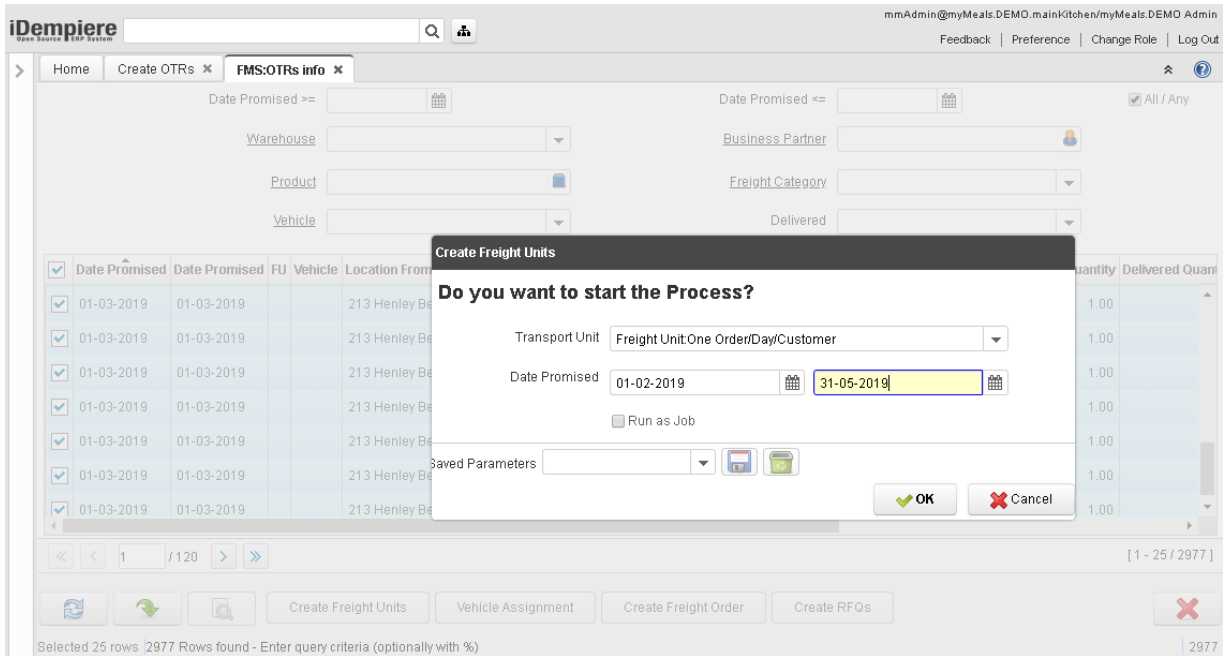
Process updates the field FU and you can see result..
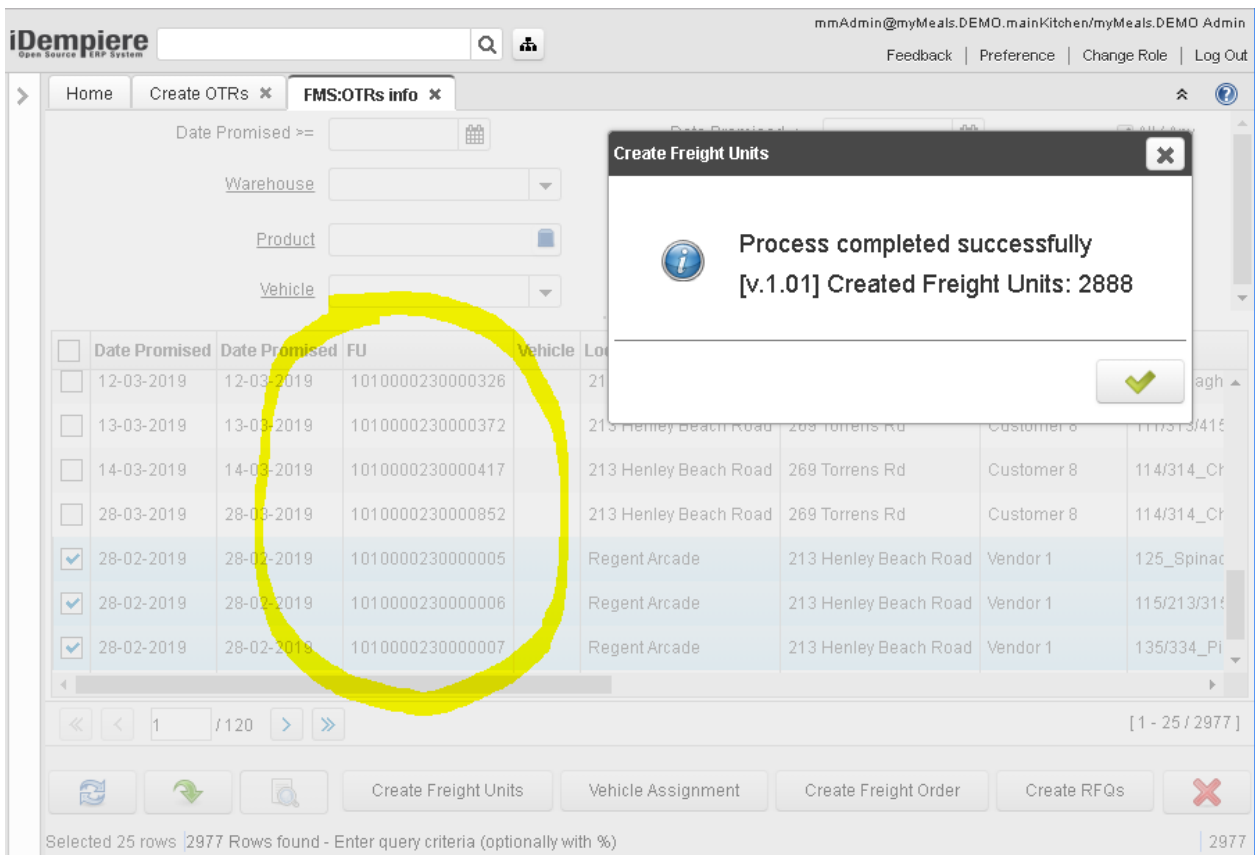
P.S. We can combine this process with Create OTRs process and create FU automaticaly (used rules) as in SAP TM.

3.4.3   Vehicle Assigment

This process Assign Vehicles based selected Vehicle Type for selected records of grid (when parameter Date promised is empty).But if you entered parameter Date promised that process run for period.

Process updates the field Vechicle and you can see result.

3.4.4   Create RFQs (optional)

You can create Request For Quotations and use standard Purchasing functionality for a Carriers select.

Parameters RfQ Topic and BP Group are mandatory.

Process create a new RfQs and you can see result.

For the next step you can use Web Store for communication with your Carriers.

More about RfQs you can found in Purchasing module.

3.4.5 Create Freight Orders

This process create new Freight Orders for selected records of the grid (when parameter Date promised is empty).But if you entered parameter Date promised that process run for period.
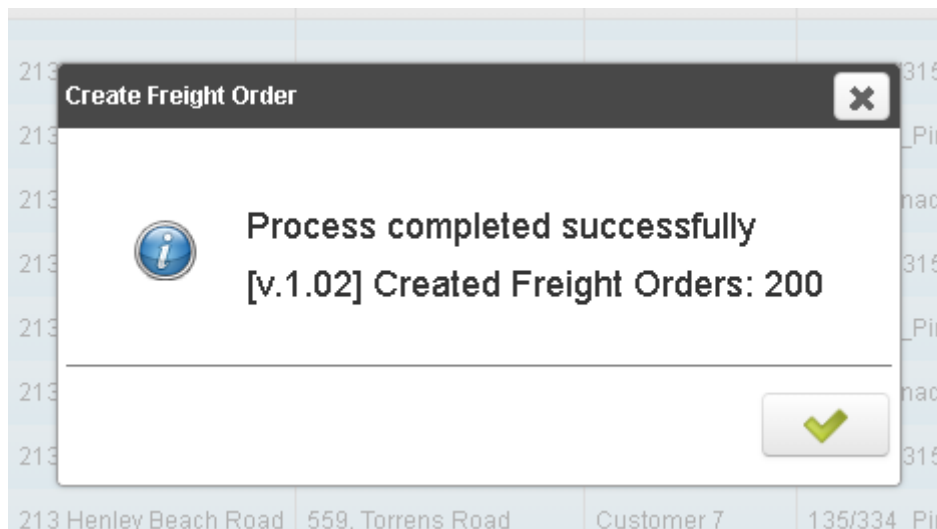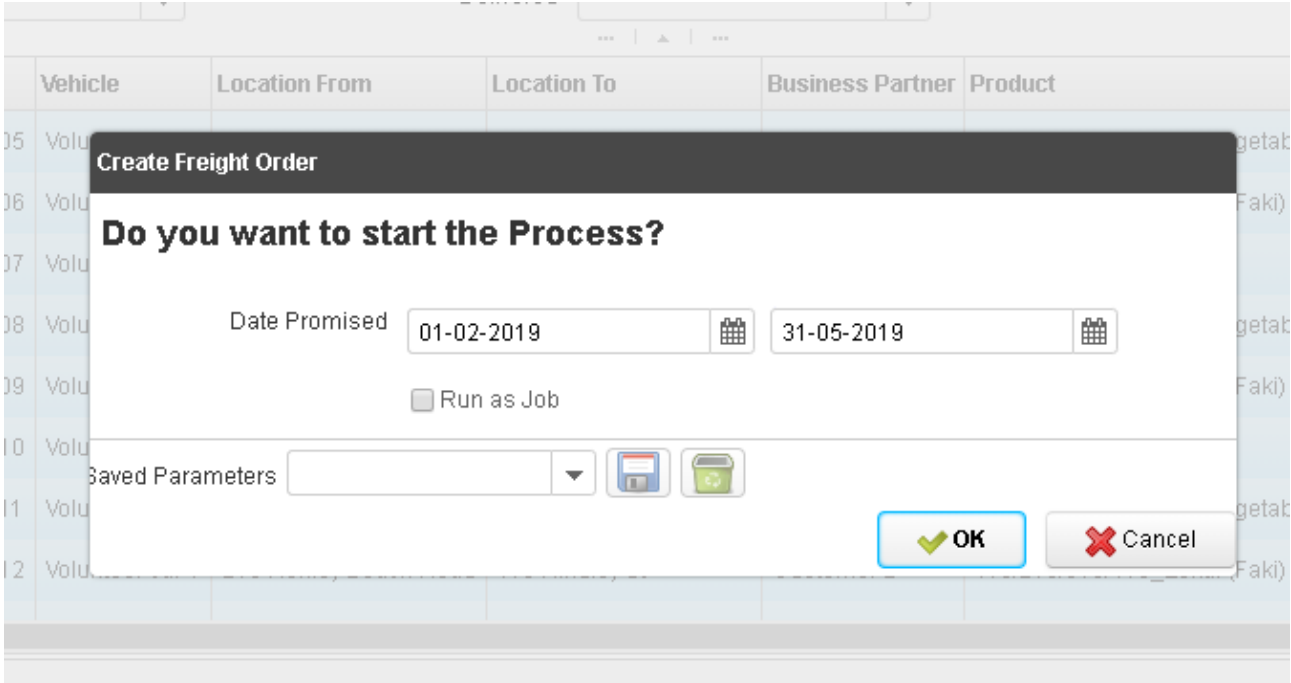
Process create a new FOs and you can see result.

The header of Freight Order.

P.S. The fields Length and Duration you need to enter manually from the map if you don't use some API or Postgis/pgRouting.

The Lines tab of the Freight Order document contain info about Products.

The Freight Stops tab of Freight Order document contain info about Stops of the current route.

P.S. You can change a field Squence manually for a sequence of stops if you don't use optimization with some API or Postgis/pgRouting.

The Cost tab of Freight Order document contain info about costing for this document.

You can add manually Cost for Fuel, Loading , Unloading and etc. for the Invoice generate.

3.4.6   Freight Cost Calculation Process

Order Transportation Requirements(OTRs) Info Window

●Freight Cost Calculation Process Run

●Process Calculation Result

3.4.7 Freight Order Cost tab

Freight Order Cost Calculate result used Freight Agreements for each Shippers:

●for Shipper 1 = Carrier 1

●for Shipper 2 = Carrier 2

●for Shipper 3 = Carrier 3

3.4.8　　Create Invoice for Freight Cost (will be soon)

This process create new Invoice for selected records of the grid (when parameter Date promised is empty).But if you entered parameter Date promised that process run for period.

P.S. This process requires coordination.

3.4.8.1　　Product or Charge

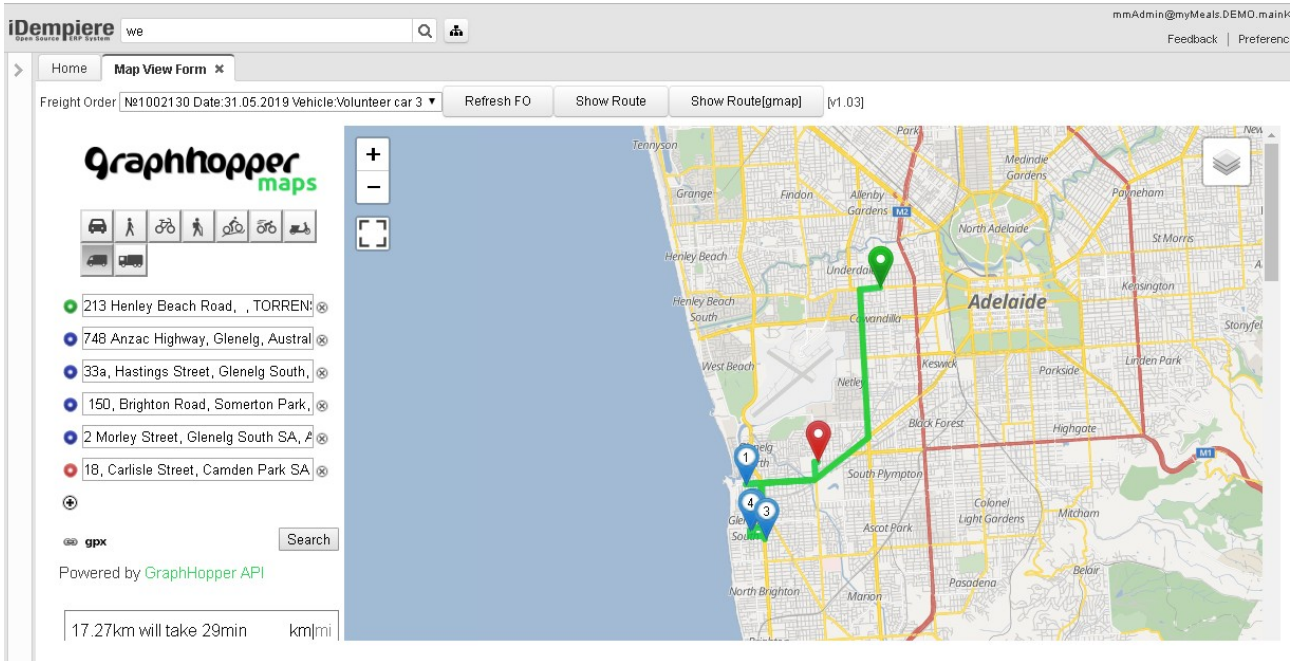Create Invoice based a Product or Charge.

3.4.8.2　　Landed Cost

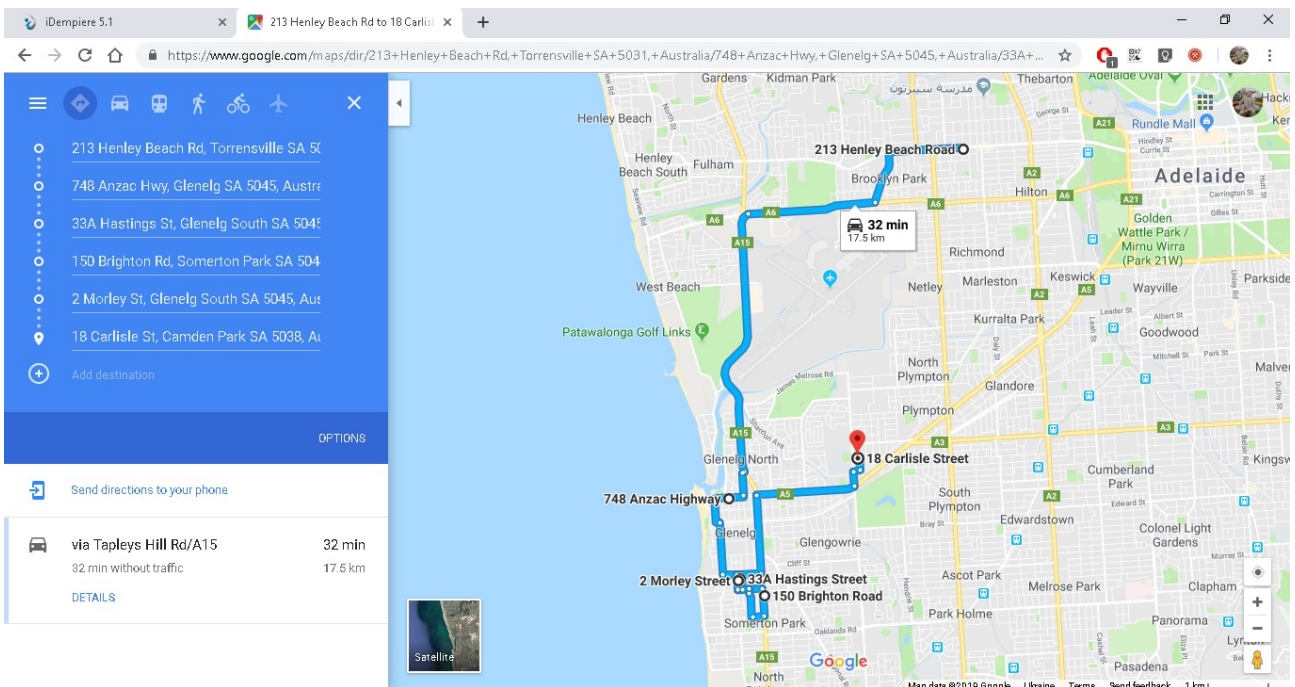Create Invoice based a Charge and Shipments for Landed Cost.

3.5 Map View Form

You can see Route on the map for each Freight Orders on GraphHopper Maps in the frame.

or/and Google Maps on the new browser tab

4   Project Protocol

4.1.1   Project Version

Transport Management v1.0.1a [*without support PostGIS&pgRouting*]

4.1.2   Source Repository

https://bitbucket.org/pshepetko/org.maximea.tms

4.1.3   Project Forum for Support

General support forum https://groups.google.com/forum/#!forum/idempiere

Issues for this plugin https://bitbucket.org/pshepetko/org.maximea.tms/issues

4.1.4   Contact

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Peter Shepetko: pshepetko@gmail.com