consultancy

Google Embedded Maps Connector

INTEGRATE GOOGLE MAPS AS A PRO IN YOUR OWN APPLICATIONS

www.fd-consultancy.be

GOOGLE EMBEDDED MAPS CONNECTOR

Install the software

Execute the EmbeddedbMaps.exe setup. This will install and register the software. Now you can add the automations in dynamics Navision. This will make the Google Maps API available within your applications.

For a complete list of features and properties please refer to :

https://developers.google.com/maps/documentation/javascript/reference

Following items are included :

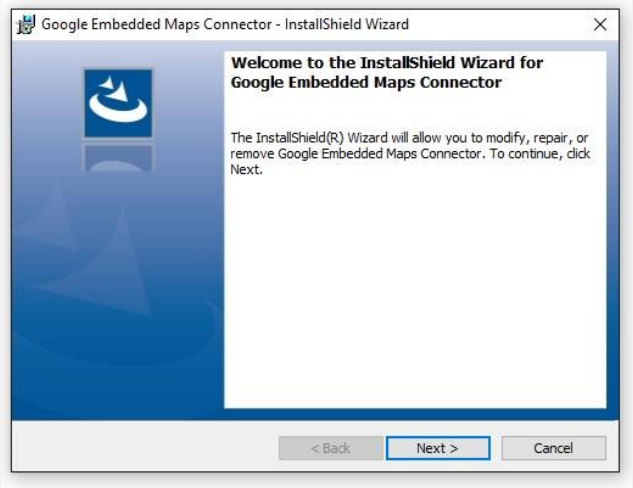
Codeunit :

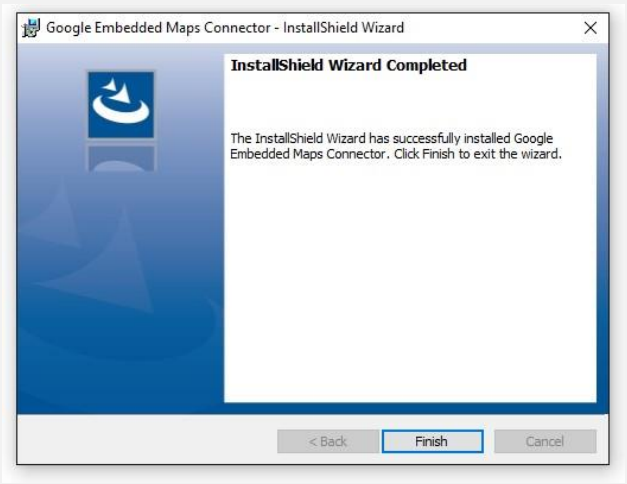
- Google Maps Provider
- Google Maps Management (complete set of instructions to use google maps functionality)

Form :

- Google Maps Container (this form contains the integrated Google map)

The form contains a number of functions, that can be used to integrate cards, markers, etc on any form. (see examples)



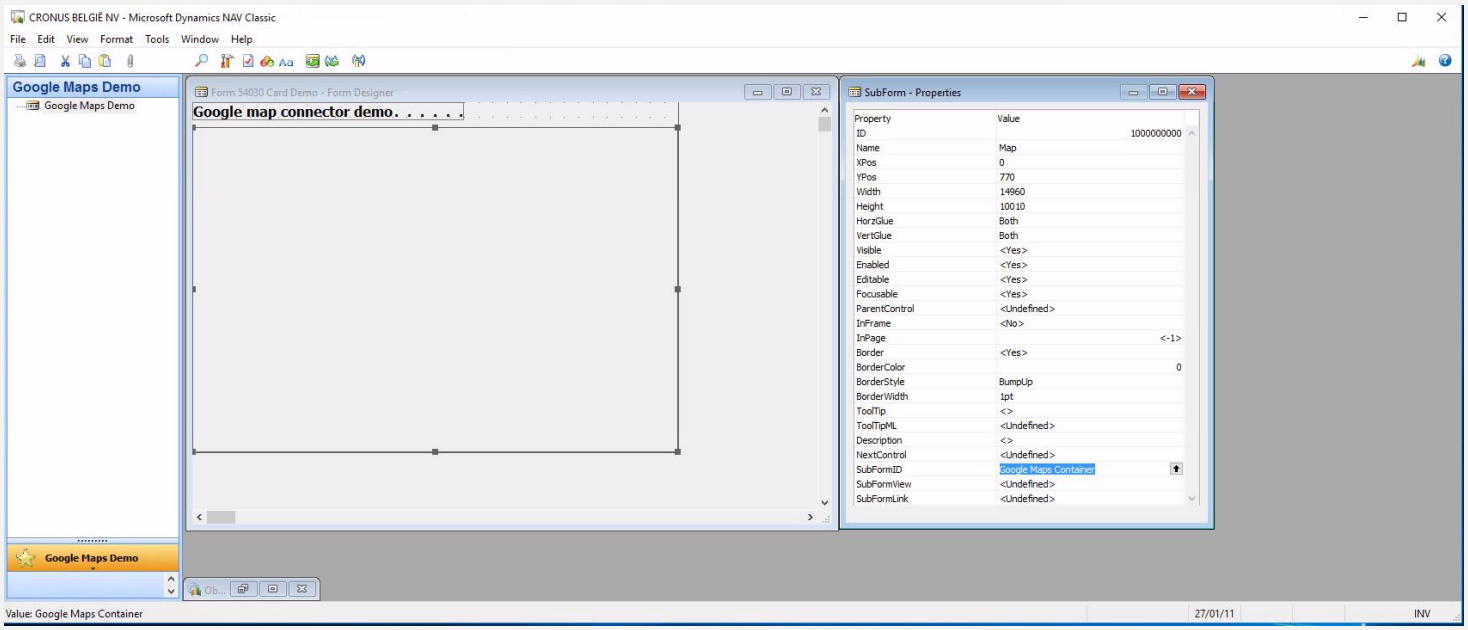


GOOGLE EMBEDDED MAPS CONNECTOR

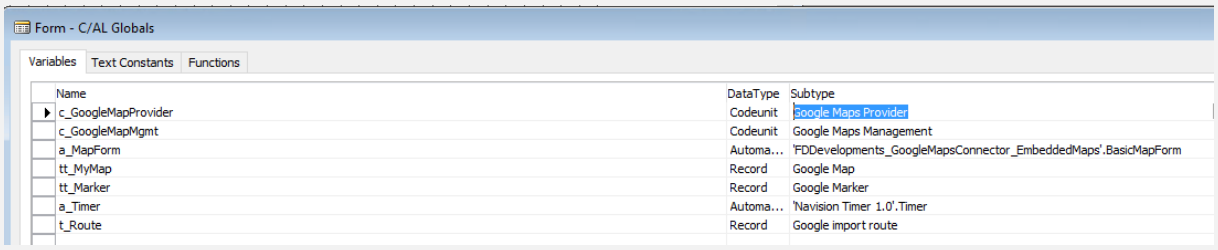
Examples of integration

Create an integrated map

Easy creation of an integrated Google map in any form. Open the form and add a subform. (Subform id = Google Maps Container).



Add the following variables (copy paste)



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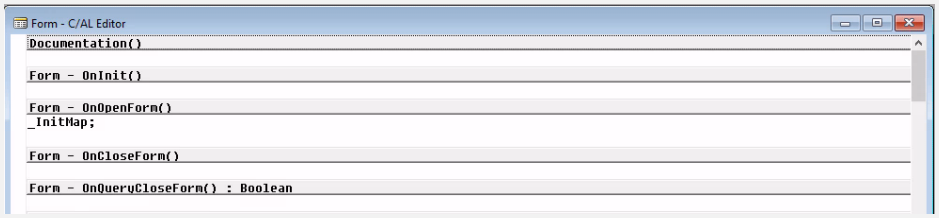
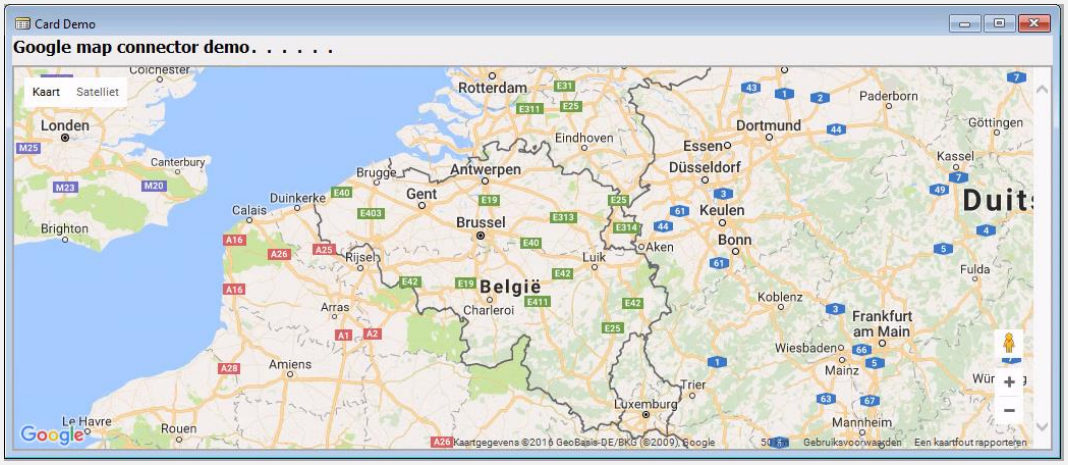
Examples of integration

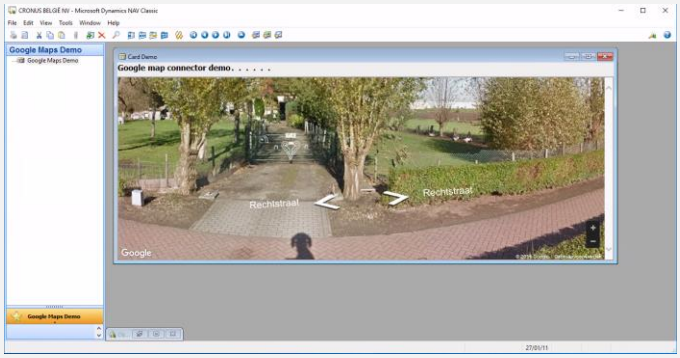
Add supplied function _InitMap on the OnOpenForm trigger.



Run the form, "here's your first map !"



Fully functional google map with all the functionality. (Map, satellite, street view, zoom, drag) in your application.



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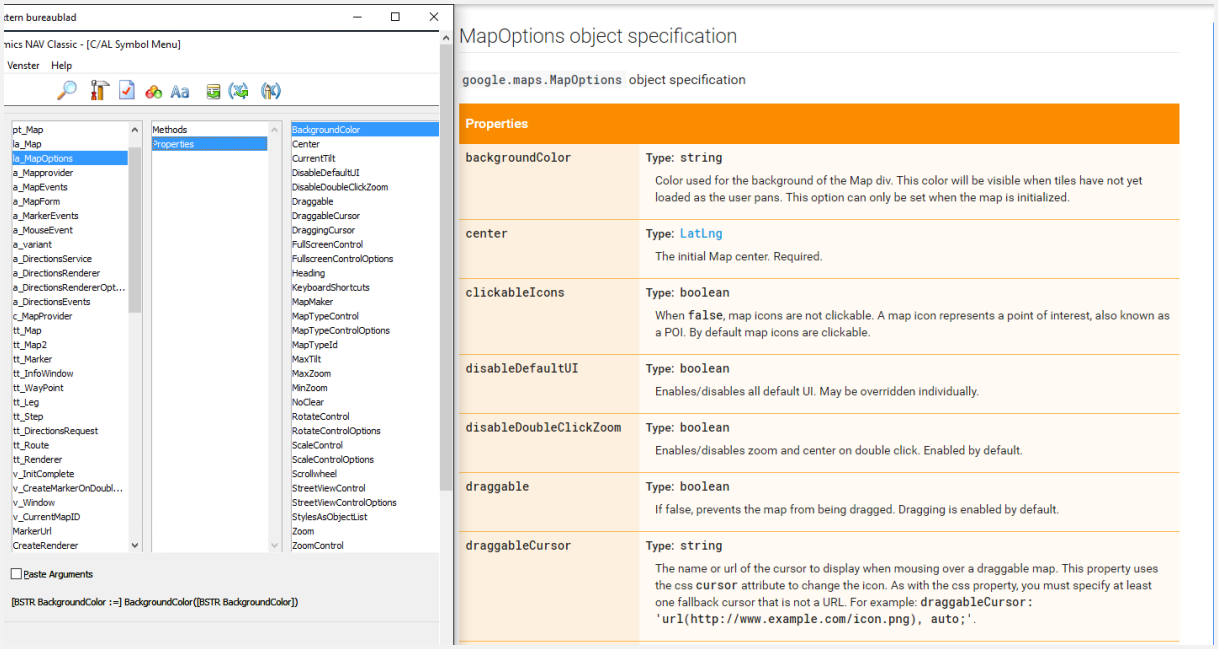
Examples of integration

For the available methods and properties, see Google's website :

https://developers.google.com/maps/documentation/javascript/reference#Map



Movie available on :

http://fd-consultancy.be/wp-content/uploads/2016/06/google%20maps%20demo%206.mp4

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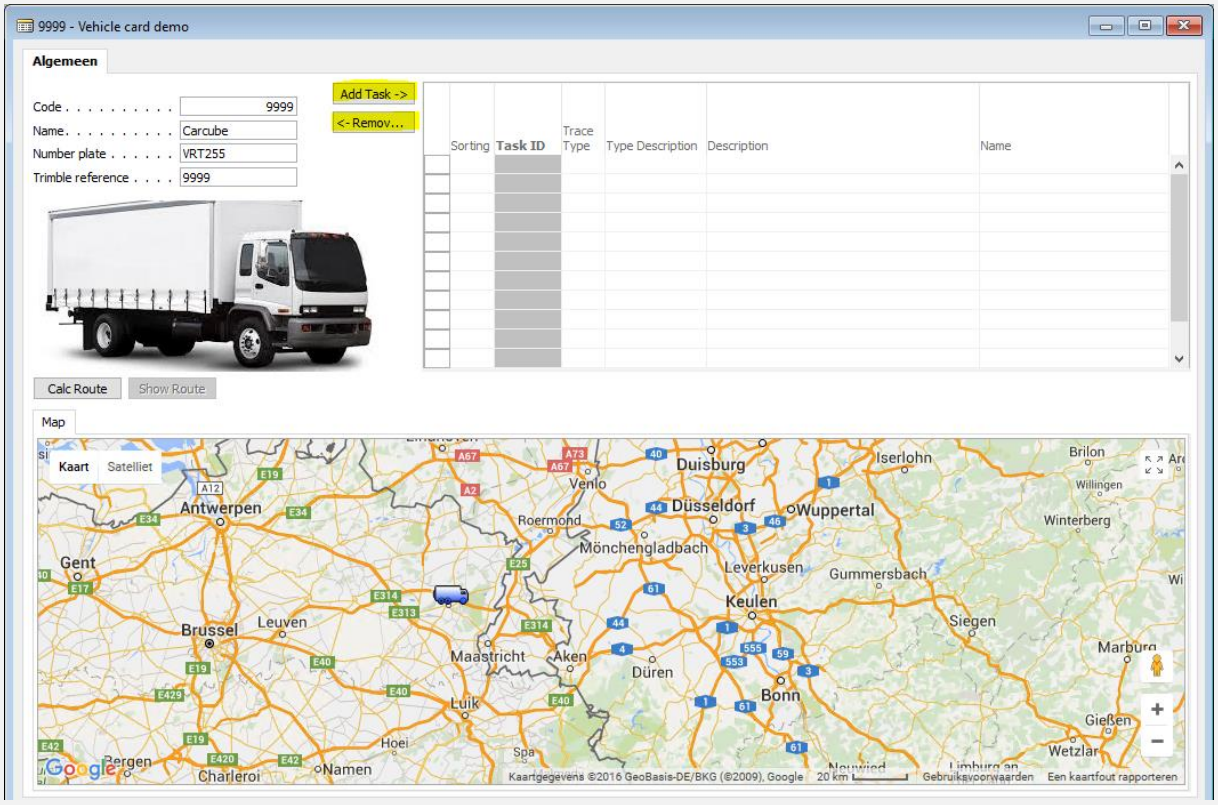
Examples of integration

Creation of a marker on a map

On an existing form where orders are assigned to a truck (planning tool), we're going to add a map. The map will visualize both the assigned tasks and the current truck position.
(The map has already been provided as in the previous example)



First we create 2 functions :

- **'Add Marker'** : place a marker on the map.
- **'Remove Marker'** : remove a marker from the map.

These functions we add to the existing function buttons on the form (Add task,Remove Task).

(These functions are already provided)

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Examples of integration

Function _AdMarker

Form - C/AL Editor

```
_AddMarker(pv_Type : 'Vehicle,Task';Pv_TaskId : Code[20])
IF NOT tt_MyMap.FINDFIRST THEN
  EXIT;
CASE pv_Type OF
  //taak op map
  pv_Type::Task : BEGIN
    lt_TaskData.GET(Pv_TaskId);
    tt_Marker.INIT;
    tt_Marker.MapID := tt_MyMap.MapID;
    tt_Marker.Latitude := lt_TaskData.Latitude;
    tt_Marker.Longitude := lt_TaskData.Longitude;
    lt_TaskData.CALCFIELDS ("Trace Type");
    IF lt_TraceSourceType.GET (lt_TaskData."Trace Type") THEN BEGIN
      IF (tt_Marker.Icon <> lt_TraceSourceType.Icon) OR
         (tt_Marker."Custom Markericon URL" <> lt_TraceSourceType."Custom MarkerIcon URL") THEN BEGIN
            tt_Marker.Icon := lt_TraceSourceType.Icon;
            tt_Marker."Custom Markericon URL" := lt_TraceSourceType."Custom MarkerIcon URL";
          END;
       END;
     tt_Marker.Title := lt_TaskData."Task ID";
     c_GoogleMapMgmt.CreateMarker (tt_Marker);
  END;
```

Function _DeleteMarker

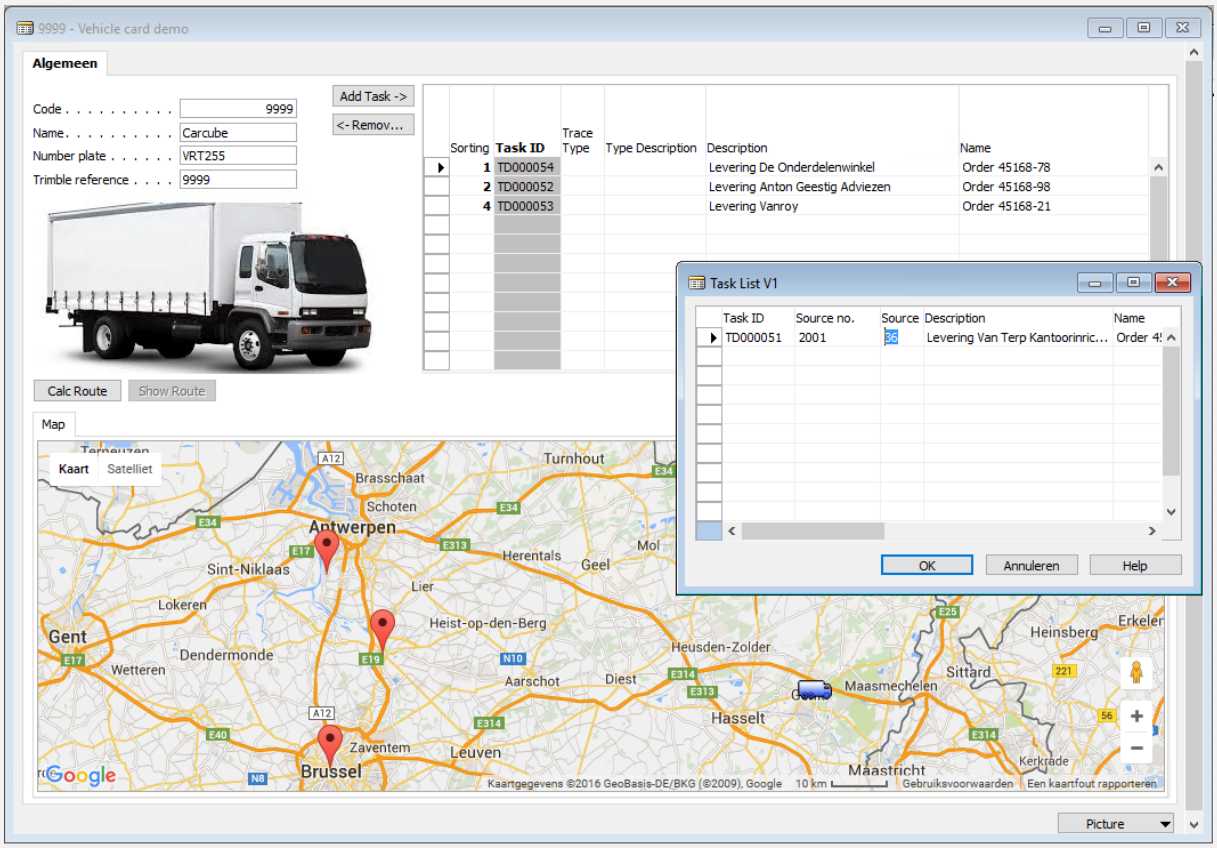
Form - C/AL Editor

```
_DeleteMarker(pv_Type : 'Vehicle,Task';Pv_TaskId : Code[20])
    lt_TaskData.GET(Pv_TaskId);
    tt_Marker.INIT;
    tt_Marker.MapID := tt_MyMap.MapID;
    tt_Marker.Latitude := lt_TaskData.Latitude;
    tt_Marker.Longitude := lt_TaskData.Longitude;
    lt_TaskData.CALCFIELDS ("Trace Type");
    tt_Marker.Visible := FALSE;
    IF lt_TraceSourceType.GET (lt_TaskData."Trace Type") THEN BEGIN
      IF (tt_Marker.Icon <> lt_TraceSourceType.Icon) OR
         (tt_Marker."Custom Markericon URL" <> lt_TraceSourceType."Custom MarkerIcon URL") THEN BEGIN
            tt_Marker.Icon := lt_TraceSourceType.Icon;
            tt_Marker."Custom Markericon URL" := lt_TraceSourceType."Custom MarkerIcon URL";
          END;
      END;
     tt_Marker.Title := lt_TaskData."Task ID";
     c_GoogleMapMgmt.UpdateMarker (tt_Marker);
```

Google embedded maps connector

Examples of integration

Once this code has been added, the tasks are visualized in real time on the map.



The markers are fully editable . For available functions and properties, see Google's website.

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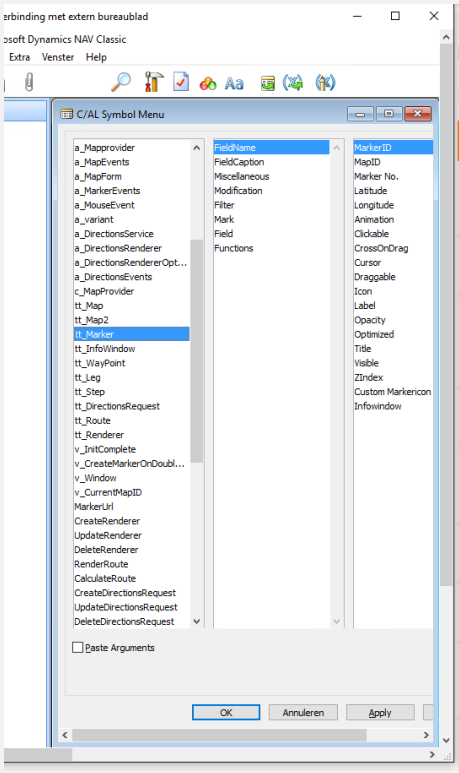
Examples of integration

Google's website :

https://developers.google.com/maps/documentation/javascript/reference#MarkerOptions



MarkerOptions object specification

`google.maps.MarkerOptions` object specification

Properties	
`anchorPoint`	**Type:** `Point` The offset from the marker's position to the tip of an InfoWindow that has been opened with the marker as anchor.
`animation`	**Type:** `Animation` Which animation to play when marker is added to a map.
`attribution`	**Type:** `Attribution` Contains all the information needed to identify your application as the source of a save. In this context, 'place' means a business, point of interest or geographic location. `attribution` must be specified with a `place` in order to enable a save.
`clickable`	**Type:** `boolean` If true, the marker receives mouse and touch events. Default value is true.
`crossOnDrag`	**Type:** `boolean` If false, disables cross that appears beneath the marker when dragging. This option is `true` by default.
`cursor`	**Type:** `string` Mouse cursor to show on hover
`draggable`	**Type:** `boolean` If true, the marker can be dragged. Default value is false.
`icon`	**Type:** `string|Icon|Symbol` Icon for the foreground. If a string is provided, it is treated as though it were an `Icon` with the string as `url`.
`label`	**Type:** `string|MarkerLabel` Adds a label to the marker. The label can either be a string, or a `MarkerLabel` object. Only the

Google embedded maps connector

Examples of integration

Manipulation of the markers on a map (route calculation)

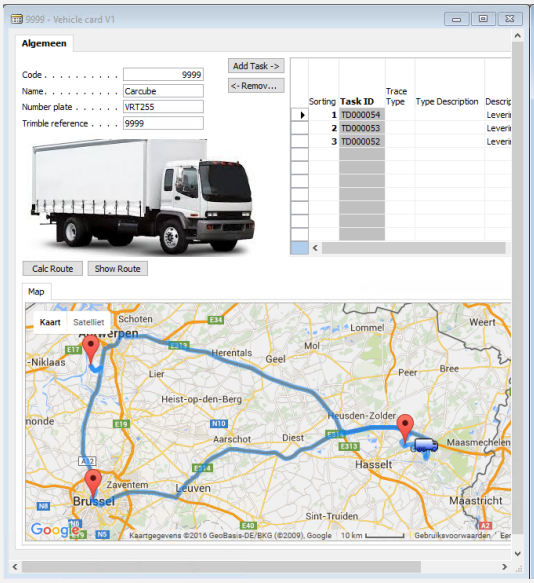
We're going to add a button that optimizes the route for all tasks. For this, we fill a table "waypoints" with the coordinates of the truck and all tasks. We call one function "CalculateRoute" and the connector does the rest…

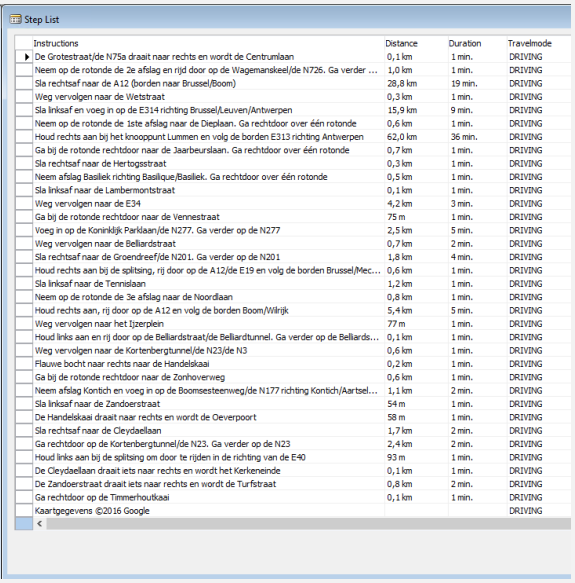
CommandButton - C/AL Editor

```
tt_Marker.SETFILTER (Title,'<>%1', COPYSTR ("Number plate",1,MAXSTRLEN(tt_Marker.Title)));
tt_Marker.FINDFIRST;
REPEAT
  tt_WayPoints.INIT;
  tt_WayPoints."Directions ID" := tt_Directions."Directions ID";
  tt_WayPoints."Map ID" := tt_MyMap.MapID;
  tt_WayPoints.Latitude := tt_Marker.Latitude;
  tt_WayPoints.Longitude := tt_Marker.Longitude;
  tt_WayPoints.Stopover := TRUE;
  tt_WayPoints."Source No." := tt_Marker.MarkerID;
  IF (tt_WayPoints.Latitude <> 0) AND (tt_WayPoints.Longitude <> 0) THEN BEGIN
    c_GoogleMapMgmt.CreateWayPoint(tt_WayPoints);
    tt_Route."Line No." += 10000;
    tt_Route.WayPointID := tt_WayPoints."Waypoint ID";
    tt_Route.INSERT;
  END;
UNTIL tt_Marker.NEXT = 0;

c_GoogleMapMgmt.CalculateRoute (tt_Directions);
IF ISCLEAR (a_Timer) THEN
  CREATE (a_Timer);
v_WaitForRoute := TRUE;
a_Timer.Interval := 1000;
a_Timer.Enabled := TRUE;
```

All the data is stored in own tables and can be used in your own application.





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