

# **Integration of APEX and ORDS with HERE and Google Maps**

**Practical Examples**

# Who are we?

APEX Experts is a small group of leading APEX Experts. Our goal is to become the number one address for APEX projects in the german speaking area.



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Applikationsentwicklung



Analysys & Conception



Consulting & Coaching



Plug-in-Development



Database Configuration



Application Tuning



Fixed-Price Projects

# Agenda

- History
- HERE Map Version 3.0
- Requirements
- Solution
- Truck Positioning
- Routing
- Tracing
- Tracing and Routing – Analysis of a Route
- Geocoding and Reverse Geocoding
- Integrating Google Maps

# History

- For one of my clients I started an application replacement with APEX 4.2 and HERE Maps back in 2012.
- HERE API 2.4
- The solution was more compromise or a workaround.
- Rendering the Maps and Objects using HTTP
- Performance Problems with bigger data chunks and too much code on the page.

# HERE Map Version 3.0

- In December 2015 we found out that as of March 2016 the whole HERE Maps API will go from 2.4 to 3.0.
- It was supposed to be much better and the way of working with the API has been changed dramatically – new Functions and new way of calling those.
- We couldn't and we also didn't want to go to that version by using the old structures.

# HERE Map Version 3.0

```
var mapContainer = document.getElementById("mapContainer");
var map = new nokia.maps.map.Display(mapContainer, {
  components: [
    new nokia.maps.map.component.Behavior(),
    new nokia.maps.map.component.ZoomBar()
  ], center: [52.517, 13.38], zoomLevel: 4
});
```



```
var mapContainer1 = document.getElementById('mapContainer1');
platform = new H.service.Platform({
  app_id: app_id,
  app_code: app_code,
  useCIT: true,
  useHTTPS: true,
});
map = new H.Map(mapContainer1, maptypes.normal.map,
  {center: new H.geo.Point(49.15, 9.2167), zoom: 9});
```

# HERE Map Version 3.0



Hello Mr. Kubicek,

As of March 2016 HERE will update the API version to 3.0 and the 2.4 will not work any more. If we don't update by then, the application will stop working.



# HERE Map Version 3.0

No problem.  
Yes, We Can.



# HERE Map Version 3.0

- This was just the first phase in coping with the shock.
- Soon, we had an idea...



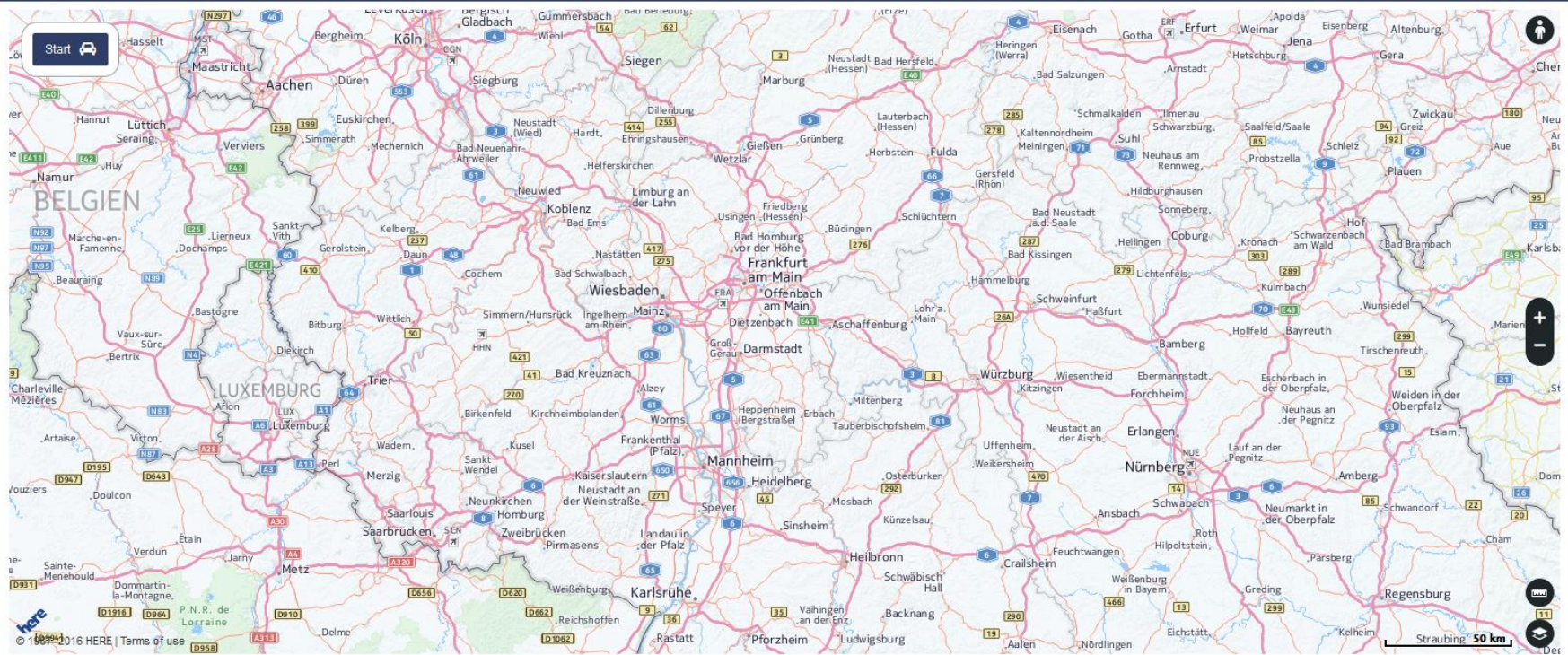
# Requirements I

- We had to replace all the old functionalities.
- We had to implement new things – Tracing.
- The place for the map should be as big as possible.
- The data selection shouldn't be visible on the screen.
- The implementation should enable copy / paste of the pages so the client can use / reuse it for all the different applications / clients he has.

# Requirements II

- The selection should support configuration.
- Refreshing the map on demand – no page refresh.
- The same settings / results should show up after the ne login as before logout.

# Requirements



# Requirements

Routing - Details X

Darstellungsoptionen:  Route  Marker  Depot Aktualisierungsintervall: - Interval wählen -

Routingoptionen: kürzeste Auto - Autobahn: niemals

Q  Los Aktionen

<input type="checkbox"/>	City	Latitude	Longitude
<input checked="" type="checkbox"/>	Bensheim	49,6877	8,6217
<input type="checkbox"/>	Würzburg	49,7685	9,9328
<input type="checkbox"/>	Mannheim	49,4889	8,4692
<input type="checkbox"/>	Heilbronn	49,15	9,2167
<input type="checkbox"/>	Stuttgart	48,7833	9,1833
<input type="checkbox"/>	Ulmstadt	48,3	9,9833
<input type="checkbox"/>	Nürnberg	49,45	11,2833
<input type="checkbox"/>	Ingolstadt	48,7667	11,4333
<input type="checkbox"/>	München	48,133	11,5667
<input type="checkbox"/>	Hamburg	53,553436	9,992247
<input type="checkbox"/>	Köln	50,9333333	6,95

1 - 11

# Solution


- The only reasonable approach was using Plug In's.
- Universal Theme was a huge help – responsive design and applicable to the most of the mobile devices (screens).

# Solution

Application 501 > Shared Components > Plug-ins

Plug-ins Utilization History

Q | Go [Grid Icon] [List Icon] Actions v

Name 	Type	Updated	Version
Basic Map	Process		1.0
Get IR Column Help	Dynamic Action		1.0
Refresh Map	Dynamic Action		1.0
Render Map	Region	43 hours ago	1.0
Update Depot	Process		1.0
Update Route	Process		1.0
Update Trace History	Process		1.0
Update Trace Route	Process		1.0
Update Tracing	Process		1.0
Update Truck Position	Process		1.0



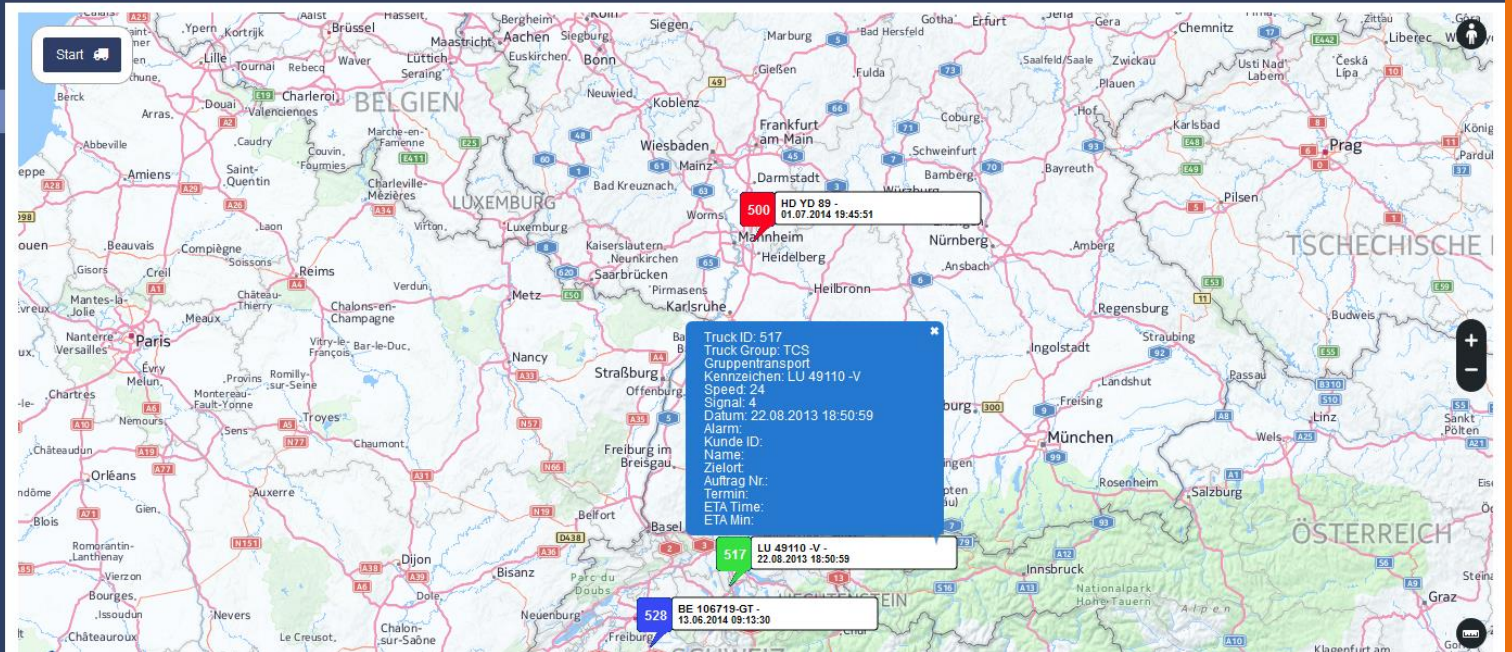
# Truck Positioning



APEX Experts - Geodata HEREMAP

Home   Aktueller Benutzer: DENES.KUBICEK   Log Out

- Home
- Routing
- Truck Locator
- Depots
- Tracing
- Tracing History
- Trace Route Analyzer



# Routing



# Tracing



APEX Experts - Geodata HEREMAP

Home ⤴ Aktueller Benutzer: DENES KUBICEK ⤴ Log Out

- Home
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- Truck Locator
- Depots
- Tracing
- Tracing History
- Trace Route Analyzer



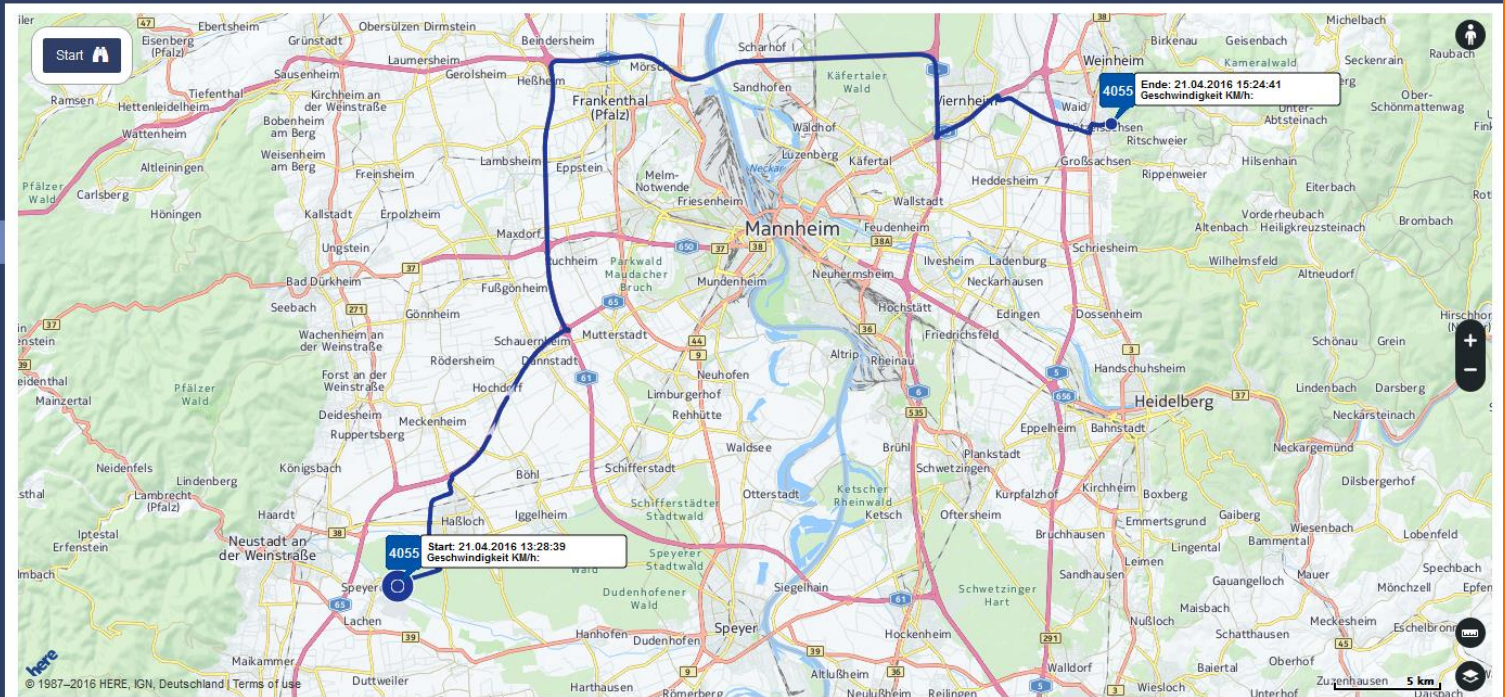
# Tracing History



☰ APEX Experts - Geodata HEREMAP

Home 👤 Aktueller Benutzer: DENES.KUBICEK 🔌 Log Out

- 🏠 Home
- 🚚 Routing
- 🚛 Truck Locator
- 📄 Depots
- 📄 Tracing
- 📄 Tracing History**
- ⚙️ Trace Route Analyzer



# Tracing und Routing – Route Analysis

**APEX EXPERTS**

APEX Experts - Geodata HEREMAP Home Aktueller Benutzer: DENES.KUBICEK Log Out

- Home
- Routing
- Truck Locator
- Depots
- Tracing
- Tracing History
- Trace Route Analyzer

Start Ende: 30.03.2016 14:06:52  
AUDI A3

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5 km

# Geocoding and Reverse Geocoding

**APEX EXPERTS**

APEX Experts - Opportunity Management Home DENES.KUBICEK Log Out

## GET Request Multiple

Adressensuche GET <http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml>

Longitude  Latitude

Q  Los Aktionen

Latitude	Longitude	PLZ	Strasse	Hausnr.	Stadt	Kreis	Bundesland	Land	Link	Label	Entfernung
49.68926	8.59827	64625	An der Hartbrücke		Bensheim	Bergstraße	Hessen	DEU	<a href="http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses">http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses</a>	An der Hartbrücke, 64625 Bensheim, Deutschland	149.2
49.69137	8.60011	64625	Außerhalb Bensheim	85	Bensheim	Bergstraße	Hessen	DEU	<a href="http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses">http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses</a>	Außerhalb Bensheim 85, 64625 Bensheim, Deutschland	152.5
49.6892757	8.6023637	64625	A5		Bensheim	Bergstraße	Hessen	DEU	<a href="http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses">http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses</a>	A5, 64625 Bensheim, Deutschland	188.1
49.68897	8.60227	64625	A5		Bensheim	Bergstraße	Hessen	DEU	<a href="http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses">http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses</a>	A5, 64625 Bensheim, Deutschland	199.5
49.6892587	8.6025769	64625	A5		Bensheim	Bergstraße	Hessen	DEU	<a href="http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses">http://reverse.geocoder.cit.api.here.com/search/6.2/reversegeocode.xml?app_id=prEfrAh7XUB5estAJAD&amp;app_code=WNJd0x-zDKWf9wUuQ5YJiQ&amp;gen=3&amp;prox=49.69,8.6,500&amp;mode=retrieveAddresses</a>	A5, 64625 Bensheim, Deutschland	202.9

# Integrating Google Maps

The screenshot displays the APEX EXPERTS web application interface. At the top left is the APEX EXPERTS logo. Below it is a dark blue navigation bar with the text "APEX Experts - Geodata HEREMAP / Google Map" and user information "Home", "Aktueller Benutzer: APEX\_CONNECT\_2016", and "Log Out". A left sidebar contains a menu with items: Home, Routing, Truck Locator, Depots, Tracing, Tracing History, Trace Route Analyzer, Google Maps Plugin (highlighted), and Google Maps Multiple Marker. The main content area is titled "Google Map Region" and features an address input field with the placeholder text "ex: Berliner Ring 105, Bensheim, Germany". Below the input field is a Google Map showing the region around Bensheim, Germany, with a red location pin on the city. The map includes various road labels and geographical features.

# Integrating Google Maps

- The same approach as for HERE Maps.
- The code is almost the same.
- The function names are almost identical.
- Parameters are passed the same way.
- Who copied who?



# Integrating Google Maps

The screenshot displays the APEX Experts web interface. The top navigation bar includes the APEX EXPERTS logo, the page title "APEX Experts - Geodata HEREMAP / Google Map", and user information: "Home", "Aktueller Benutzer: APEX\_CONNECT\_2016", and "Log Out".

The left sidebar contains a menu with the following items: Home, Routing, Truck Locator, Depots, Tracing, Tracing History, Trace Route Analyzer, Google Maps Plugin, and Google Maps Multiple Marker (which is currently selected).

The main content area is titled "Google Map Multiple Marker Region". It features an "Address" input field containing "Berliner Ring 99 Bensheim" and a "Json" field containing the following data:

```
Json {
  "LOCATIONS": [
    {
      "LATITUDE": "49.68983",
      "LONGITUDE": "8.60902",
      "LABEL": "Berliner Ring 99, 64625 Bensheim, Deutschland"
    },
    {
      "LATITUDE": "49.68939",
      "LONGITUDE": "8.61003",
      "LABEL": "Peter-Krenkel-Str\u00e4\u00dfe 16, 64625 Bensheim, Deutschland"
    }
  ]
}
```

The map below shows the location of Bensheim, Germany, with several red location markers placed on the map. The map includes street names such as "Berliner Ring", "Bertolt-Brecht-Ring", "Peter-Krenkel-Str\u00e4\u00dfe", and "Beginnenstra\u00dfe". A green location marker is also visible near "AVL Deutschland".

# Integrating Google Maps

- Using Geocoding and Reverse Geocoding.
- Using JSON through APEX.
- Iterating through a JSON String with Javascript and rendering maps.