



---

# Comment s'y retrouver dans les API grands publics pour la mise en place de sites cartographiques ?

---

Cédric Moullet

**Les Rencontres de SIG-la-Lettre, Mai 2010**

---

# Agenda

---

- API ?
- Les API de services
- Les API de bibliothèque logicielle
- Questions et conclusions

# Editeur et intégrateur de solutions logicielles Open Source

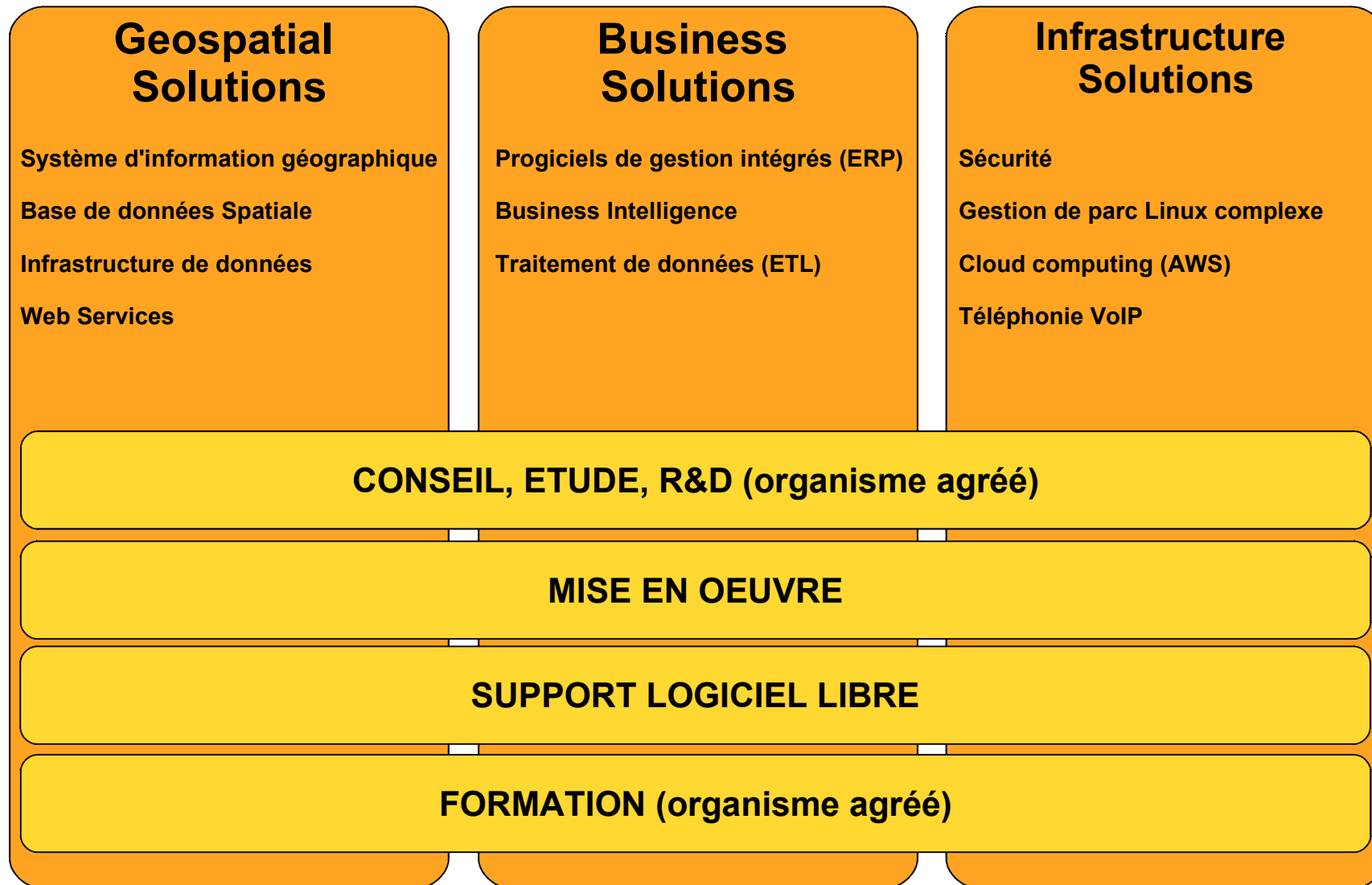


Lausanne



Chambéry

# Des produits et services complémentaires



---

---

# Qu'est qu'une API ?

# Qu'est ce qu'une API ?

Une interface de programmation (**Application Programming Interface** ou API) est un ensemble de fonctions, procédures ou classes mises à disposition des programmes informatiques par une **bibliothèque logicielle**, un **système d'exploitation** ou un **service**.

---

---

# API de services

# API de service

Google Map API

IGN API

OpenAddresses API

GeoAdmin API

MapQuest API

Youmapps API

ViaMichelin API

Ovi Maps API

Yahoo! Maps API

Bing Maps API

GeoNames API

CloudMade API

Map24 API

MultiMap Open API

Mappy API

OpenStreetMap XAPI et API

ETC...



# Analyse des API de service: critères

- Statistiques
- Fonctionnalités
- Données
- Technologie
- Licences / Conditions d'utilisation

# Statistiques



(Seulement) une source: <http://www.programmableweb.com>

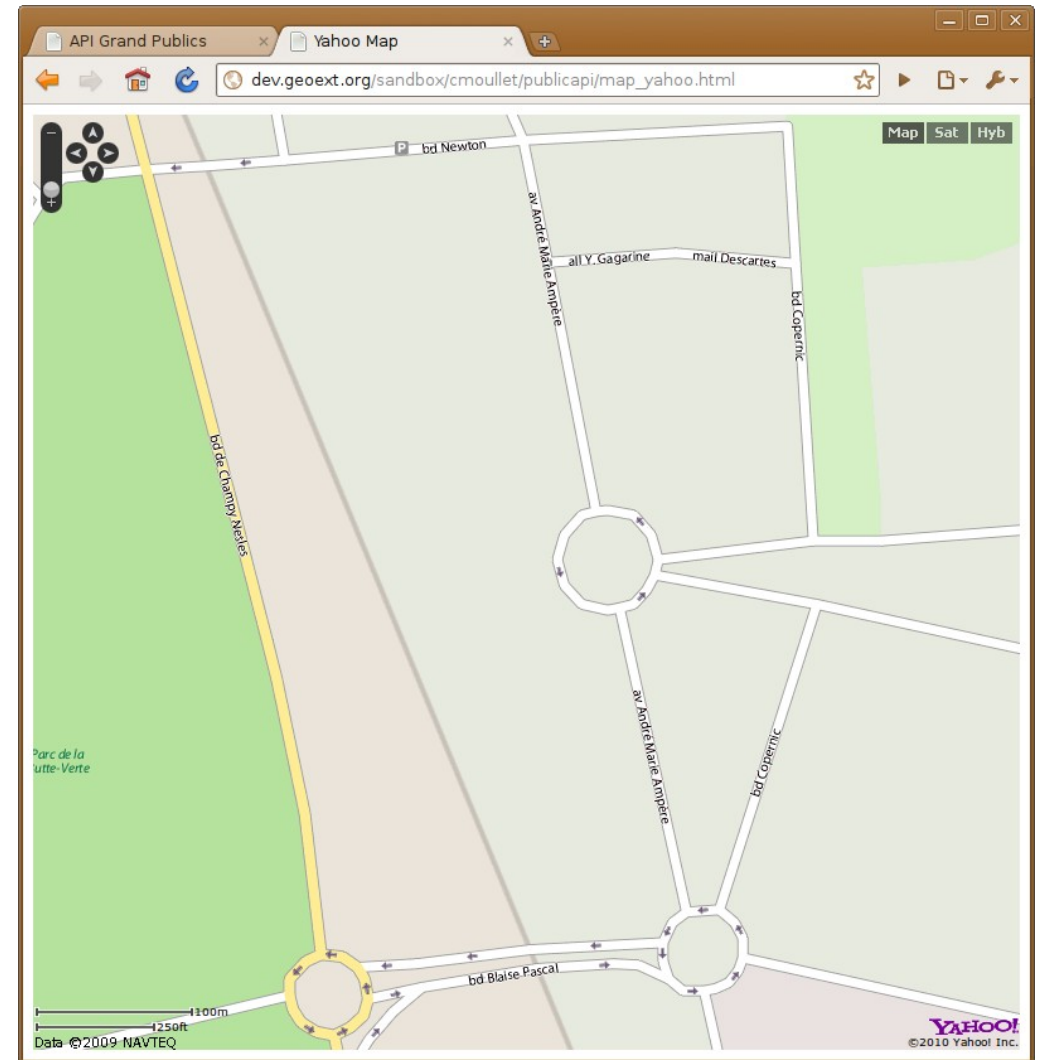
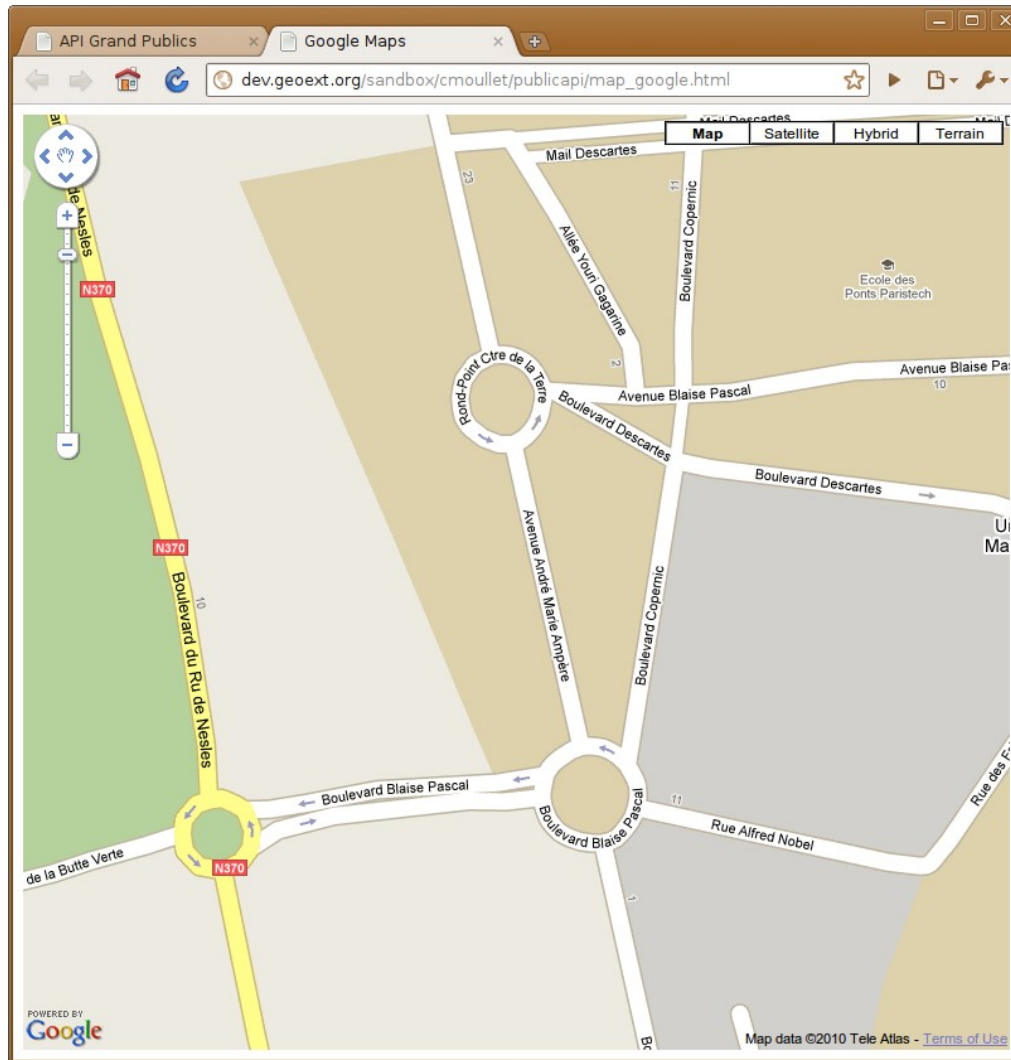
---

# Choix de 5 API's

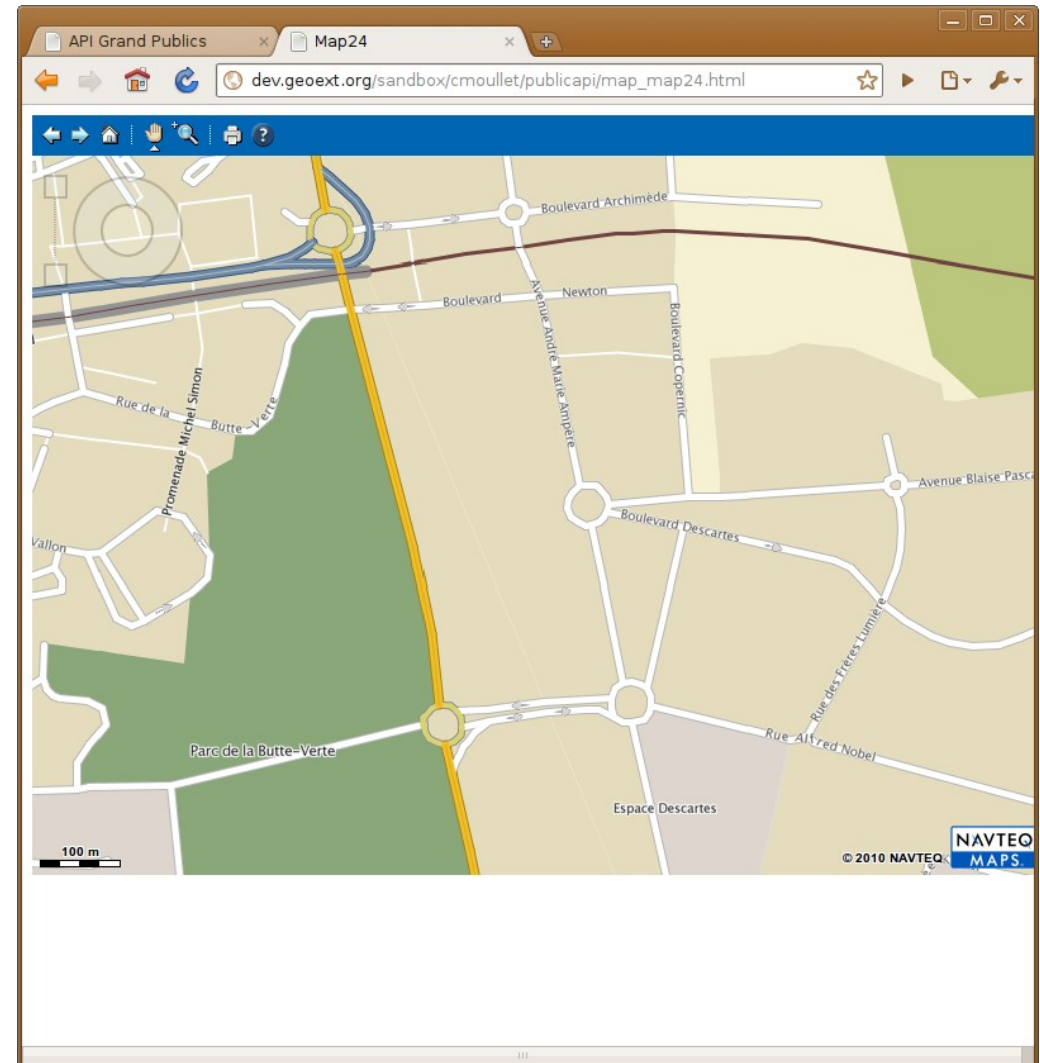
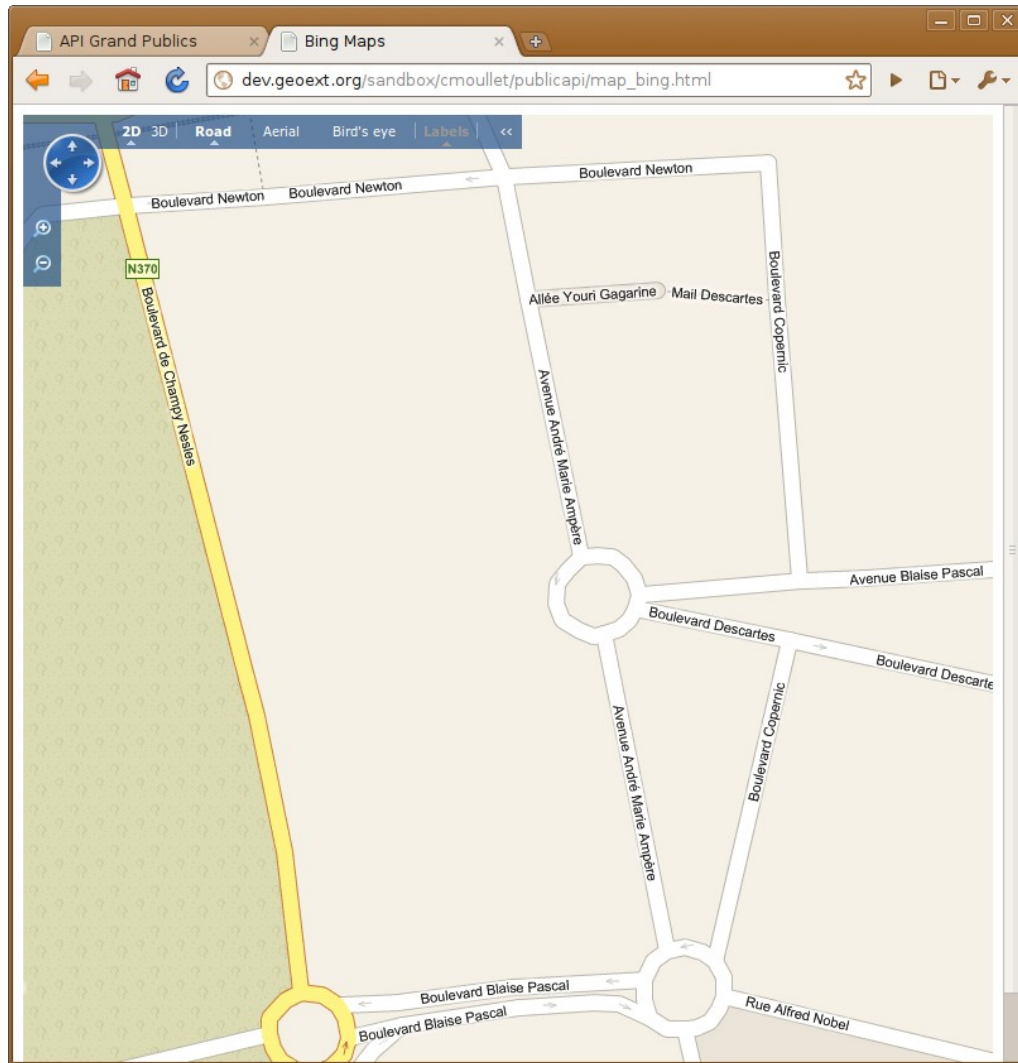
---

- Google Maps
- Yahoo! Maps
- Bing Maps
- Map24
- IGN

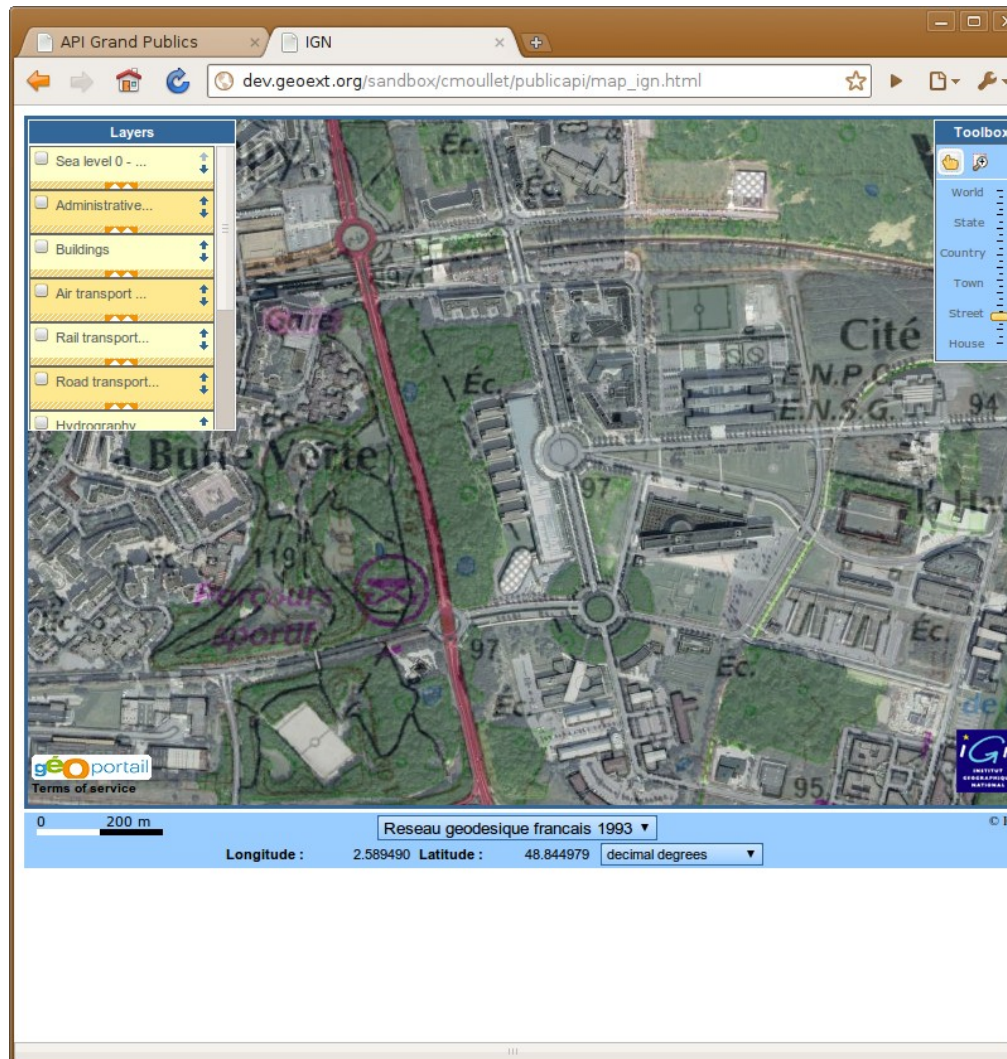
# Fonctionnalités: cartes (1)



# Fonctionnalités: cartes (2)



# Fonctionnalités: cartes (3)



# Fonctionnalités: cartes - Google Maps

<http://dev.geoext.org/sandbox/cmouillet/publicapi/>

```
<html>
<head>
  <title>Google Maps</title>
  <meta name="viewport" content="initial-scale=1.0, user-scalable=no"/>
  <script type="text/javascript"
    src="http://maps.google.com/maps/api/js?sensor=false&key=ABQIAAAAY-I0w1WyNCVHbxpuwQWMpRTv_-
xvSZ6KJmWSkQfCJoxbiB7tyBQley_kgwA_p7sbTQST0BeMyXtXKA"></script>
  <script type="text/javascript">
    function initialize() {
      var latlng = new google.maps.LatLng(48.8402, 2.5838);
      var myOptions = {
        zoom: 17,
        center: latlng,
        mapTypeId: google.maps.MapTypeId.ROADMAP
      };
      var map = new google.maps.Map(document.getElementById("map_canvas"), myOptions);
    }
  </script>
</head>
<body onload="initialize()">
<div id="map_canvas" style="width:100%; height:100%"></div>
</body>
</html>
```

# Fonctionnalités: cartes - Yahoo Maps

<http://dev.geoext.org/sandbox/cmoulet/publicapi/>

```
<html>
<head>
  <title>Yahoo Maps</title>
  <script type="text/javascript"
    src="http://api.maps.yahoo.com/ajaxymap?
v=3.8&appid=7hkG5l3V34FMXizccH3TD3aYPurAC1U_irE.81LMYwruKfx2WpHgFN6tshTBrP0HN2GEq1k-"></script>
  <style type="text/css">
    #map {
      height: 100%;
      width: 100%;
    }
  </style>
</head>
<body>
<div id="map"></div>
<script type="text/javascript">
  // Create a map object
  var map = new YMap(document.getElementById('map'));
  // Add map type control
  map.addTypeControl();
  // Add map zoom (long) control
  map.addZoomLong();
  // Add the Pan Control
  map.addPanControl();
  // Set map type to either of: YAHOO_MAP_SAT, YAHOO_MAP_HYB, YAHOO_MAP_REG
  map.setMapType(YAHOO_MAP_REG);
  var center = new YGeoPoint(48.8402, 2.5838);
  // Display the map centered on a geocoded location
  map.drawZoomAndCenter(center, 1);
</script>
</body>
</html>
```

# Fonctionnalités: cartes - Bing Maps

<http://dev.geoext.org/sandbox/cmoulet/publicapi/>

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
<head>
  <title>Bing Maps</title>
  <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
  <script type="text/javascript" src="http://ecn.dev.virtualearth.net/mapcontrol/mapcontrol.ashx?v=6.2"></script>
  <script type="text/javascript">
    var map = null;
    var latLong = null;
    function GetMap()
    {
      map = new VEMap('myMap');
      map.AttachEvent("oncredentialerror", MyHandleCredentialsError);
      map.AttachEvent("oncredentialvalid", MyHandleCredentialsValid);
      map.SetCredentials("Aq5iKX74RozeorqtIW44_gdknjehuo-f8HHsKsg0U-xVSq-9PPBMc75zqD3-fpKy");

      map.LoadMap();
      latLong = new VELatLong(48.8402, 2.5838);
      map.SetCenterAndZoom(latLong, 17);
    }
    function MyHandleCredentialsError()
    {
      alert("The credentials are invalid.");
    }
    function MyHandleCredentialsValid()
    {
    }
  </script>
</head>
<body onload="GetMap();">
<div id='myMap' style="position:relative; width:100%; height:800px;"></div>
</body>
</html>
```

# Fonctionnalités: cartes - Map24

<http://dev.geoext.org/sandbox/cmoulet/publicapi/>

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
<head>
  <meta http-equiv="content-type" content="text/html; charset=UTF-8"/>
  <title>Map24</title>
  <script type="text/javascript" language="javascript"
    src="http://api.maptp.map24.com/ajax?appkey=FJX8bd693e2c0784ae3a9e86908121c7X50">
  </script>
  <script type="text/javascript" language="javascript">
    function goMap24() {
      //Load core and wrapper classes and specify a callback method. This method is called when the API is loaded and the map
      //can be shown.
      Map24.loadApi(["core_api", "wrapper_api"], map24ApiLoaded);
    }
    //Callback function called when the API is loaded. The map can now be shown.
    function map24ApiLoaded() {
      //Initialize mapping client and show map.
      Map24.MapApplication.setStartMapView( {
        UpperLeftLongitude: 154.828,
        UpperLeftLatitude: 2930.612,
        LowerRightLongitude: 155.228,
        LowerRightLatitude: 2930.212
      } );
      Map24.MapApplication.init({ nodeName: "maparea" });
    }
  </script>
</head>
<body onload="goMap24()">
<div id="maparea" style="width:800px;height:600px;background-color:#E0E0E0;"></div>
</body>
</html>
```

# Fonctionnalités: cartes - IGN

<http://dev.geoext.org/sandbox/cmoulet/publicapi/>

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>IGN</title>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8"/>
  <script
    type="text/javascript"
    src="http://api.ign.fr/geoportail/api?v=1.0&key=9068624171319277469&instance=VISU">
    <!-- -->
  </script>
  <script type="text/javascript">
    function initGeoportalMap() {
      // Par défaut on se positionne sur la France métropolitaine :
      // Default to France main land :
      geoportalLoadVISU("GeoportalVisuDiv");
      // Avec un code territoire (ici la Guadeloupe), on peut choisir son point de vue
      // Snapshot with a territory code (here Guadeloupe island)
      // geoportalLoadVISU("GeoportalVisuDiv", "normal", "GLP");
      if (VISU) {
        VISU.addGeoportalLayers();
      }
      //VISU.getMap().setCenter(VISU.viewerOptions.defaultCenter, VISU.viewerOptions.defaultZoom);
      VISU.getMap().setCenterAtLonLat(2.5838, 48.8402, 15);
    }
  </script>
  <style type="text/css">
    div#GeoportalVisuDiv {
      width: 800px;
      height: 600px;
    }
  </style>
</head>
<body>
<div id="GeoportalVisuDiv"></div>
</body>
</html>
```

# Fonctionnalités: cartes

<http://dev.geoext.org/sandbox/cmoulet/publicapi/>

Commentaires:

- Toutes nécessitent une clef
- Affichages de tuiles (toutes en SRS=900913, sauf IGN et Map24)
- Affichage des outils de navigation plus ou moins automatique
  - Par défaut dans Google / Bings / Map24 / IGN
  - A la demande dans Yahoo
- Map24: choix du système de coordonnées discutable et code peu clair.

Mon point de vue: l'API Yahoo Maps me semble plus flexible et plus simple d'utilisation

# Fonctionnalités: géocodage

<http://dev.geoext.org/sandbox/cmoulet/publicapi/>

Commentaires:

- Intégrée à l'API map, mais service également accessible
- Pas de possibilité de callback pour Google / Yahoo / Bing / Map24 / IGN (OpenLS) car pas de services REST (mais SOAP / XML... pas du web...)

# Fonctionnalités: géocodage – Google Maps

```
<html>
<head>
  <meta name="viewport" content="initial-scale=1.0, user-scalable=no"/>
  <meta http-equiv="content-type" content="text/html; charset=UTF-8"/>
  <title>Google Maps: geocoding</title>
  <script type="text/javascript" src="http://maps.google.com/maps/api/js?sensor=false&key=ABQIAAAAY-I0w1WyNCVHbxpuwQWMpRtv_-
xvSZ6KJmWskQfCJoxbiB7tyBQley_kgwA_p7sbTQSTOBeMyXtXkA"></script>
  <script type="text/javascript">
    var geocoder;
    var map;
    function initialize() {
      geocoder = new google.maps.Geocoder();
      var latlng = new google.maps.LatLng(-34.397, 150.644);
      var myOptions = {
        zoom: 8,
        center: latlng,
        mapTypeId: google.maps.MapTypeId.ROADMAP
      };
      map = new google.maps.Map(document.getElementById("map_canvas"), myOptions);
    }

    function codeAddress() {
      var address = document.getElementById("address").value;
      if (geocoder) {
        geocoder.geocode({ 'address': address }, function(results, status) {
          if (status == google.maps.GeocoderStatus.OK) {
            map.setCenter(results[0].geometry.location);
            var marker = new google.maps.Marker({
              map: map,
              position: results[0].geometry.location
            });
          } else {
            alert("Geocode was not successful for the following reason: " + status);
          }
        });
      }
    }
  </script>
</head>
<body style="margin:0px; padding:0px;" onload="initialize()">
<div>
  <input id="address" type="text" value="Sydney, NSW">
  <input type="button" value="Geocode" onclick="codeAddress()">
</div>
<div id="map_canvas" style="width:100%; height:90%"></div>
</body>
</html>
```

# Fonctionnalités: géocodage – Yahoo Maps

```
<html>
<head>
  <script type="text/javascript"
    src="http://api.maps.yahoo.com/ajaxymap?
v=3.8&appid=7hkG5l3V34FMXizccH3TD3aYPurAC1U_irE.81LMyWruKFx2WpHgFN6tshTBrP0HN2GEq1k-"></script>
  <style type="text/css">
    map {
      height: 75%;
      width: 100%;
    }
  </style>
</head>
<body>
<div id="map"></div>

<script type="text/javascript">
  // Create a map object
  var map = new YMap(document.getElementById('map'));

  // Add map type control
  map.addTypeControl();

  // Set map type to either of: YAHOO_MAP_SAT, YAHOO_MAP_HYB, YAHOO_MAP_REG
  map.setMapType(YAHOO_MAP_REG);

  // Display the map centered on a geocoded location
  map.drawZoomAndCenter("Sydney, NSW", 3);
</script>
</body>
</html>
```

# Fonctionnalités: géocodage – Bing Maps

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
<head>
    <title></title>
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
    <script type="text/javascript" src="http://ecn.dev.virtualearth.net/mapcontrol/mapcontrol.ashx?v=6.2"></script>
    <script type="text/javascript">
        var map = null;

        function GetMap()
        {
            map = new VEMap('myMap');
            map.SetCredentials("Aq5iKX74RozeorqtIW44_gdknjehuo-f8HHsKsg0U-xVSq-9PPBMc75zqD3-fpKy");
            map.LoadMap();
        }

        function FindLoc()
        {
            try
            {
                map.Find(null, document.getElementById("txtWhere").value);
            }
            catch(e)
            {
                alert(e.message);
            }
        }
    </script>
</head>
<body onload="GetMap();" >
<div id='myMap' style="position:relative; width:400px; height:400px;"></div>
<INPUT id="txtWhere" type="text" name="txtWhere">
<INPUT id="find" type="button" value="Find" name="find" onclick="FindLoc();">
</body>
</html>
```

# Fonctionnalités: géocodage – Map24 (1)

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
<head>
    <meta http-equiv="content-type" content="text/html; charset=UTF-8"/>
    <title>Geocoding</title>

    <script type="text/javascript" language="JavaScript" type="text/javascript"
        src="http://api.maptp.map24.com/ajax?
appkey=FJX8bd693e2c0784ae3a9e86908121c7X50"></script>
    <script type="text/javascript" language="JavaScript" type="text/javascript">

        function goMap24() {
            Map24.loadApi(["core_api", "wrapper_api"], map24ApiLoaded);
        }

        function map24ApiLoaded() {
            Map24.MapApplication.init({ NodeName: "maparea" });
            document.getElementById('button_search').disabled = false;
        }

        //Geocode an address.
        //The address is provided in the searchText parameter as free text.
        function geocode(searchText) {
            if (Map24.trim(searchText) == "") {
                alert("Please enter an address.");
                return;
            }

            var geocoder = new Map24.GeocoderServiceStub();
            //Geocodes the address. The address is passed in the Search field. The
            Alternatives field defines the number
            //of geocoded addresses that are returned in the response. You must
            pass the name of the callback function
            //that is called as soon as the client has received the response.
            geocoder.geocode({ SearchText: Map24.trim(searchText),
            MaxNoOfAlternatives: 10, CallbackFunction: printResult });
        }
    </script>
</head>
</html>
```

# Fonctionnalités: géocodage – Map24 (2)

```
//Callback function that is called after the client has received the response.
//This function accesses the array of geocoded addresses and shows them in a list.
//The elements of this array are objects of the type Map24.Location.
function printResult(locs) {
    //Center the map view on the first element in the array of geocoded addresses. A Map24.Location object has several
    //methods and properties which you can find in the API documentation for the corresponding class.
    Map24.MapApplication.center({
        Longitude: locs[0].getLongitude(), Latitude: locs[0].getLatitude(), MinimumWidth: 2500
    });

    //Create a list that shows the results.
    var result = "<br /><center><b>Search results:</b></center><hr />";

    //Iterate through the array of locations.
    for (var i = 0; i < locs.length; i++) {

        //Output all relevant properties of all locations.
        result += "<b>Result Nr." + (i + 1) + "</b><br />";

        result += "Longitude " + [i + 1] + ": " + locs[i].getLongitude() + "<br />";
        result += "Latitude " + [i + 1] + ": " + locs[i].getLatitude() + "<br />";

        result += "City: " + locs[i].getCity() + "<br />";
        result += "Zip: " + locs[i].getZip() + "<br />";
        result += "County: " + locs[i].getCounty() + "<br />";
        result += "State: " + locs[i].getState() + "<br />";
        result += "Country: " + locs[i].getCountry() + "<br />";
        result += "<input type=\"button\" value=\"Center on Result\" onclick=\"Map24.MapApplication.center( {Longitude: " +
        locs[i].getLongitude() + ", Latitude: " + locs[i].getLatitude() + "});\" />";
        result += "<hr/>";
    }
    document.getElementById("geocodingresults").innerHTML = result;
}

</script>
</head>

<body onload="goMap24()">
<div id="maparea" style="width:700px;height:500px;background-color:#E0E0E0;"></div>
<b>Address: </b><input id="address_field" type="text" style="margin-top:8px" size="40" maxlength="50"/>
<br/>
<input type="submit" style="margin-top:5px" value="Search" id="button_search" disabled="disabled"
    onclick="return geocode( document.getElementById('address_field').value )"/>
<br/>
<br/>
<div id="geocodingresults" style="width:700px;background-color:#E0E0E0;"></div>
</body>
</html>
```



# Fonctionnalités: itinéraires

- Google: Oui
- Yahoo: Oui
- Bing: Oui
- Map24: Oui
- IGN: Non

# Exemples intéressants

- Itinéraire “on the fly” avec [Map24](#)
- Profile en long avec [Google](#)
- Recherche par auto-complétion avec [OpenAddresses](#)
- Transport multimodal avec [Google](#)
- Digitalisation avec [Yahoo](#)
- Visualisation avec [StreetView](#)
- Géolocalisation avec [Google](#)
- Routing avec [Cloudmade](#)

---

# Données

---

- Google Maps / Yahoo Maps / Bing Maps / Map 24 / IGN:  
les données sont associées aux services
  - Cartes
  - Orthophotos
  - Lieux / Adresses

# Données: gratuit n'est pas égal à libre !!

- Les services sont la plupart du temps gratuit (dans les limites des conditions d'utilisation) mais ne sont jamais libres de droit

## ▪ **EXCEPTION:**

- OpenStreetMap
- OpenAddresses
- OpenAerialMap

# Technologie

	AJAX / Javascript	Flash/Flex	Silverlight	Java
Google Maps	X	X		
Yahoo Maps	X	X		
Bing Maps	X		X	
Map24	X			X
IGN	X	X (non finalisé)		

# Conditions d'utilisations (1) (ceci n'est pas un gag)

NAVTEQ Terms of Use

www.nn4d.com/user/TermsOfUse.jsp

This page is in German Would you like to translate it? Translate Nope Options

## NAVTEQ Terms of Use

Terms and Conditions of Use Updated February 2010 Welcome to the NAVTEQ Network for Developers Site (the "Site"). These terms and conditions of use (the Terms and Conditions of Use") govern the relationship between NAVTEQ North America, LLC (together with its parent company and its parent company's subsidiaries, "NT", "we" or "us") and you (either an individual person or a single legal entity, referred to herein as "You") with respect to your use of the Site. By clicking your acceptance of these Terms and Conditions of Use and/or accessing, browsing or using the Site, you acknowledge that you have read, understood and agreed to be bound by these Terms and Conditions of Use. In addition, you hereby represent and certify that you are at least eighteen (18) years of age. If you do not agree to these Terms and Conditions of Use, you may not access the Site or any of the services offered through the Site. 1. Registration In order to access portions of the Site, you must complete a registration form for the Site and become a member. You agree to provide accurate, current and complete information about yourself as prompted by our online registration form and maintain and update your information to keep it accurate, current and complete. You acknowledge that, if any information provided by you is untrue, inaccurate, not current or incomplete, we may immediately, and without notice, terminate your membership and your use of the Site. You acknowledge and agree that we have the right to deny membership in the Site to any applicant at our sole discretion. Information that you provide at registration and through your use of the Site is subject to our Privacy Policy, accessible at nn4d.com. 2. Terms and Conditions of Use NT reserves the right, in its sole discretion, to update, revise supplement and otherwise modify these Terms and Conditions of Use, and to impose new or additional terms and conditions on Your use of the Site from time to time. Such updates, revisions, supplements, modifications and additional rules, policies, terms and conditions (collectively, "Additional Terms") will be effective immediately and incorporated into these Terms and Conditions of Use upon posting to the Site. Your continued use of the Site shall be deemed to conclusively indicate your acceptance of any and all such Additional Terms. 3. License From time to time, NT, in its sole discretion, may make certain NT map data, documentation and other information or materials directly available to you through the Site ("NT Materials"). Except as specifically provided in Section 3(a) below, NT grants you a non-exclusive, non-transferable, non-sublicensable, restricted right, to use the NT Materials solely to evaluate a potential business relationship related to products and services available from NT. Some materials available through the website, including but not limited to the NAVTEQ SMART Tools for Mobile SDK, may be subject to separate licensing terms, and those terms shall supersede the terms provided in this Section 3. (a) Additional Rights for Digital Map Region Data. NT may make certain Digital Map Region Data available as part of the NT Materials available on the Site. In connection with such Digital Map Region Data, in addition to the rights granted above, NT grants you a non-exclusive, non-transferable, non-sublicensable, restricted right, to use the Digital Map Region Data for a period of six (6) months following your receipt of the Digital Map Region Data, unless otherwise terminated as provided herein, solely to (i) develop applications that use the NT map data and (ii) demonstrate Licensed Applications to prospective clients, including at trade shows and other pre-commercial activities, at no cost, provided, however, you may not make such Licensed Applications accessible to third parties in any other way, including without limitation, by making such Licensed Applications available through a website. NAVTEQ may, at its sole discretion and with its prior written consent, permit access to certain Licensed Applications under certain conditions through a public website. If you want to make Your Licensed Application accessible through a public website, you must contact NAVTEQ directly. You may use documentation related to the Digital Map Region Data which is made available by NT as part of the NT Materials in connection with the development of Licensed Applications as permitted in subsection (ii) above, however such documentation may not be made available to third parties, including without limitation in connection with demonstrations of Licensed Applications as permitted in subsection (ii) above. As used herein, "Licensed Application" shall mean Your proprietary, non-commercial product or service. (b) Restrictions The rights granted in this Section 3 are subject to the following restrictions: (i) You shall not copy or reproduce any NT Materials, except with NT's prior written authorization or as otherwise specifically provided in this Section 3; (ii) You shall not disclose, publish, sell, transfer, distribute or otherwise reveal any NT Materials to any third party whatsoever, except with NT's prior written authorization or as otherwise specifically provided in this Section 3 (iii) You shall not disassemble, decompile or otherwise reverse engineer any NT Materials; (iv) In no event shall you use NT Materials for commercial or revenue generating purposes; (v) You shall notify NT promptly in writing in the event of any unauthorized disclosure or use of the NT Materials and You shall cooperate fully with NT to cure any such unauthorized disclosure or use; (vi) You must retain all copyright and other proprietary notices on all downloaded and copied NT Materials; (vii) You shall not use the NT Materials for product, program or service comparisons of any kind; benchmarking or for any use not explicitly authorized in this Section 3 and (viii) You must adhere to the NT Logo and Copyright Guidelines as provided in Section 9. 4. Acceptable Use In order to use the Site, you must obtain access to the World Wide Web directly or through devices that access Web-based content and pay any and all service fees associated with such access. (a) Individual Use. Except as specifically provided herein, you agree that you are only authorized to visit view and to retain a single copy of pages of the Site for your own internal use and not on behalf of any other person or entities, and that you will not duplicate, download, publish, modify or otherwise distribute any NT Material on the Site for any purpose other than for your own internal use unless otherwise specifically authorized by NT in writing. We post legal notices and various credits on pages of the Site, which may not be removed even in your permitted copies. (b) Deep Links; Linking. You agree not to "deep-link" to the Site, meaning that You will not create, post, display, publish or distribute any link to any page other than the front (home) page of the Site for any purpose, unless specifically authorized by NT in writing to do so. (c) Framing. You agree not to create any frames at any other web sites pertaining to or using any of the content located at the Site for any purpose, unless specifically authorized by NT in writing to do so. (d) Security, Cracking and Hacking. You are prohibited from violating or attempting to violate the security of the Site. Accordingly, you agree not to: (i) access data or materials not intended for you; (ii) log into a server or account which you are not authorized to access; (iii) attempt to probe, scan or test the vulnerability of a system or network or to breach security or authentication measures without proper authorization; or (iv) attempt to interfere with service to any user, host or network, including without limitation, by means of submitting a virus to the Site, overloading, "flooding", "mailbombing" or "crashing" the Site. Violations of system or network security may result in civil or criminal liability. NT reserves the right to investigate occurrences which may involve such violations and may involve, and cooperate with, law enforcement authorities in prosecuting users who have participated in such violations. You understand that data and communications, including e-mail and other electronic communications, may be accessed by unauthorized third parties when communicated over the Internet. (e) You Are Responsible For All of Your Activities and All of The Content You Post or Submit. You represent and warrant that any information and/or material you post or provide to NT by means of the Site, including, without limitation, as part of any registration or subscription or to gain access to or use any services offered on the Site ("Submissions"), is truthful, accurate, not misleading, not confidential property of others, not in violation of any other third party's rights and offered in good faith. You agree NOT to use the Site for or in connection with any of the following activities: (i) transmitting or relaying spam, spoofing or otherwise impersonating any person or entity, or falsely stating or otherwise misrepresenting your identity or affiliation in any way; (ii) using the Site for any fraudulent or illegal purpose; (iii) e-mailing, uploading, or otherwise transmitting or using the Site in furtherance of the use, distribution or transmission of any unlawful, harassing, defamatory, tortious, libelous, sexually explicit, obscene, hateful, racially, ethnically or otherwise objectionable material of any kind; and (iv) transmitting material that contains viruses, Trojan horses, worms, time bombs, cancelbots or other computer programming routines or engines that are intended to damage, destroy, disrupt or otherwise impair a computer's functionality or the operation of the Site. (f) Information Disclosed via the Site. Any information disclosed to you via the Site including, without limitation, any content, product or configuration recommendations or product specifications, are not offered with any warranty or representation as to accuracy, performance or suitability for your intended purpose or compliance with applicable law. NT expects that you will exercise caution, best practices and oversight in using information supplied through the Site. (g) Do Not Violate Third Party Intellectual Property Rights. Without limiting the foregoing, you may not, and by using the Site you agree not to, use the Site to: (i) transmit or post any Submissions that are copyrighted, unless you are the copyright owner or have obtained the permission of the copyright owner to transmit it; (ii) transmit or post any Submissions that reveal trade secrets, unless you own them or have the permission of the owner to so transmit them; or (iii) transmit or post any Submissions that infringe on any Intellectual Property Rights (as defined below) of others or violates the privacy or rights of publicity of others. Furthermore, unless otherwise expressly provided, you acknowledge and agree that: (a) all Submissions will become property of NT; (b) NT has the right to publish the Submissions for any type of use including for promotional and advertising purposes, in accordance with the terms set forth in the Privacy Policy, without compensation to you of any kind; (c) any Submissions that you submit to any part of the Site are non-confidential for all purposes; and (d) that if you make any such Submission, you automatically grant, represent and warrant that the owner of such content has expressly granted NT a royalty-free, perpetual, irrevocable, world-wide exclusive license to use the Submissions in any manner, media or form now known or hereafter developed. NT shall have the right to sublicense its rights through multiple tiers of sublicensees. For purposes of these Terms, the term "Intellectual Property Rights" means collectively, rights under patent, trademark, copyright and trade secret laws, and any other intellectual property or proprietary rights recognized in any country or jurisdiction worldwide, including, without limitation, moral rights and similar rights. (h) Ownership. All content and materials on the Site including, without limitation, text, graphics, logos, buttons, icons, images, audio clips and software are included in the Site and any services offered on the Site, are the property of NT, its sponsors or business affiliates, and/or their respective licensors, and are subject to U.S. and international copyright, trademark and other proprietary rights and Intellectual Property Rights laws. The compilation of all content on the Site is the exclusive property of NT and is protected by U.S. and international copyright laws. All software used on the Site is the property of NT or its licensors and is subject to U.S. and international copyright laws. Except to the minimum extent otherwise expressly permitted under copyright law, no copying or exploitation of material from the Site is permitted except expressly in accordance with these Terms or with the express written permission of NT and any other applicable copyright owner. You acknowledge that you do not acquire any ownership rights by virtue of downloading copyrighted material from the Site. All rights not expressly granted hereunder are expressly reserved to NT. (i) Spidering. THE USE OF ANY TOOLS, PROGRAMS, ROBOTIC ALGORITHMS OR PRODUCTS TO AUTOMATICALLY DOWNLOAD OR "SPIDER" THE SITE OR ANY OF THE PAGES OF THE SITE INFRINGES ON NT'S AND/OR ITS LICENSORS' INTELLECTUAL PROPERTY RIGHTS AND ARE NOT PERMITTED. 5. Ownership/Assignment NT is the owner of the NT Materials and derivations therefrom, including all intellectual property rights thereto. Nothing stated herein shall be deemed to grant, transfer, or assign to you any right, title, interest or ownership of the NT Materials, all of which is hereby expressly reserved by NT. You may not assign its rights or obligations under this Agreement. 6. Third-Party Products and Services Parties other than NT may offer and provide products and services and other materials either on the Site or through third-party web sites accessible from the Site. NT does not operate, control, or endorse any such Third Party information, products, or services or other materials ("Third Party Materials") accessible through the Site in any way. NT is not responsible for examining or evaluating, and NT does not warrant in any way such Third Party Materials and you agree that NT shall not be responsible or liable, directly or indirectly, for any damage or loss caused or alleged to be caused by or in connection with use of or reliance on any such Third Party Materials. Such Third Party Materials may include access to NT map data and other data from NT and use of such Third Party Materials shall be subject to applicable terms and conditions provided by such third parties. 7. Third-Party Links NT makes no claim or representation regarding, and accepts no responsibility for, the quality, content, nature, or reliability of third-party web sites accessible by hyperlink from the Site. Such linked web sites are not under the control of NT and NT is not responsible for the content of any such linked web site or any link contained in a linked web site, or any review, changes or updates to such web sites. The inclusion of any link does not imply affiliation, endorsement, or adoption by NT of such web site or any information contained therein. When leaving the Site, you should be aware that NT's terms and policies no longer govern, and, therefore, you should review the applicable terms and policies, including privacy and data gathering practices, of the third-party web site. 8. Linking You are granted a limited, non-exclusive, non-transferable, non-sublicensable right to create a hypertext link to the homepage of the Site, provided such link does not portray NT or any of its products and services in a false, misleading, derogatory, or otherwise defamatory manner. You may not use an NT logo or other proprietary graphic or trademark of NT to link to the Site without the express written permission of NT. This limited right may be revoked at any time. 9. NT LOGO AND Copyright Guidelines The NAVTEQ ON BOARD® logo is the main identity element used by developers, partners and customers to reference NAVTEQ® maps. The logo must be used in all Licensed Applications that are demonstrated to end users as permitted herein and in all co-marketing materials (including advertising, CD/DVDs, hardware, packaging, printed materials, and splash screens). The logo must be displayed in 2-color using the NAVTEQ blue (Pantone® 293C). Minimum logo size requirements are 36 pixels wide at 72 dpi. When used on a splash screen, the NAVTEQ ON BOARD logo must be centered and displayed for a minimum of two seconds. The copyright notice also may be displayed on the same splash screen, along the bottom underneath the logo, or the notice may be displayed separately on another splash screen, or on the map itself. For Licensed Applications that are demonstrated or directed online (e.g., "mashups" or hosted applications) the NAVTEQ ON BOARD logo and copyright notice shall be displayed, with a click-through option hyperlinked to the Site. For web-based Licensed Applications, the maps should include the copyright notice along the bottom edge of the map, either adjacent to the map or overlaid on the map. Where practicable, the copyright notice shall be placed in the lower right corner of the screen. In the event the Licensed Application does not include a splash screen, or cannot otherwise incorporate the NAVTEQ ON BOARD logo and copyright notice, you may display the logo and copyright notice on an associated website or may contact NT to determine an acceptable alternative. All use of NT logos and copyrights must be in accordance with the NAVTEQ Identity Guidelines and NAVTEQ Best Practices and Co-Marketing Guidelines, which are available from NT. 10. Term and Termination The term of these Terms and Conditions of Use shall commence on the date upon which you agree to these Terms and Conditions of Use and shall continue in force thereafter, unless terminated as provided herein. NT may change, suspend or discontinue all or any aspect of the Site, including its availability, at any time and may suspend or terminate Your use of the Site at any time. Either You or NT may terminate these Terms and Conditions of Use at any time, for any reason, or for no reason at all. Upon any termination of these Terms and Conditions of Use, (i) all license rights granted herein shall terminate and Your right to use the Site shall immediately cease; (ii) you shall destroy all NT Materials or Third Party Materials obtained from or through the Site and copies thereof; and (iii) upon the request of NT after the termination of these Terms and Conditions of Use, you shall certify to NT in writing within ten (10) days of such request, that You have destroyed or returned all NT Materials and all copies thereof. 11. Confidentiality You acknowledge that your membership in the Site and use of the Site may expose you to certain Confidential Information of NT. "Confidential Information" means any and all information and material (whether in writing, or in oral, graphic, electronic or any other form) that is marked or described as, identified in writing as, or provided under circumstances indicating it is, confidential or proprietary. NT Materials shall be deemed Confidential Information. You shall hold all Confidential Information in strict confidence and shall not disclose any Confidential Information to any third party. You shall disclose the Confidential Information only to your employees and agents who need to know such information and who are bound by restrictions regarding disclosure and use of such information comparable to and no less restrictive than those set forth herein. In addition, you shall not use the Confidential Information for any purpose other than in the performance of these Terms and Conditions of Use. You shall take the same degree of care that you use to protect Your confidential and proprietary information of similar nature and importance (but in no event less than reasonable care) to protect the confidentiality and avoid the unauthorized use, disclosure, publication or dissemination of the Confidential Information. This Section 11 shall survive any termination these Terms and Conditions of Use. Further, this Section 11 is not intended to (and does not supersede) any obligations assumed by you (whether now or in the future) under a separately signed nondisclosure or confidentiality agreement with NT. 12. Disclaimer THE NT MATERIALS AND OTHER CONTENT, SERVICES, INFORMATION AND ACCESS TO THE SITE ARE PROVIDED "AS IS" AND WITHOUT WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY AND NON-INFRINGEMENT. NAVTEQ DOES NOT WARRANT THAT ANY PART OF THE SITE WILL OPERATE UNINTERRUPTED OR ERROR-FREE, THAT DEFECTS WILL BE CORRECTED, OR THAT THE SITE OR THE SERVER THAT MAKES IT AVAILABLE ARE FREE OF VIRUSES OR OTHER HARMFUL COMPONENTS OR THAT TRANSMISSION TO OR FROM THE SITE AND ACCESS TO THE SITE WILL BE UNINTERRUPTED, NOT DISCONTINUED OR ERROR-FREE. NAVTEQ DOES NOT WARRANT OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE OF THE SITE IN TERMS OF ITS QUALITY, CORRECTNESS, ACCURACY, RELIABILITY, OR OTHERWISE. YOU SHOULD THEREFORE VERIFY ANY INFORMATION OBTAINED FROM THE SITE BEFORE ACTING ON IT. EXCEPT AS OTHERWISE EXPRESSLY PROVIDED, NAVTEQ EXPRESSLY DISCLAIMS ANY RESPONSIBILITY FOR THE ACCURACY, CONTENT, AVAILABILITY OF INFORMATION, PRODUCTS, SERVICES OR MERCHANDISE FOUND ON THIRD PARTY SITES THAT LINK TO OR FROM THE SITE. NAVTEQ DISCLAIMS ANY RESPONSIBILITY FOR PRODUCT

# Conditions d'utilisations (2)

- Google Maps API
  - Pas de login
  - Toujours avec une carte Google Maps
  - Static Map: uniquement dans un browser
  - Si vous aimez les voyages: **Governing Law and Jurisdiction; Injunctive Relief. The Terms, and your relationship with Google under the Terms, will be governed by the laws of the State of California, USA, without regard to its conflict of laws provisions.**
- Pour dormir sur ces 2 oreilles: acheter la licence Google Premier

## Conditions d'utilisations (3)

- The Google Elevation service may only be used in conjunction with displaying results on a Google map; **using elevation data without displaying a map for which elevation data was requested is prohibited.**

## Conditions d'utilisation (4)

- Google Data service: You (or your licensors) retain copyright and any other rights you already hold in Your Content. By submitting, transmitting, posting or displaying Your Content through a Google Service **you give Google a perpetual, irrevocable, worldwide, royalty-free, and non-exclusive license to reproduce, adapt, modify, translate, publish, publicly perform, publicly display and distribute Your Content**

# Conditions d'utilisation (5)

- **Yahoo Maps** The Yahoo! Maps API is a free service for any application that is free of charge and does not exceed the rate limit of 50,000 requests a day. Please see the information on rate limiting, API licensing and the maps API usage policy for more information about building your application with Yahoo! or requesting an exception to the rate limits.
- **Bing Maps**
- **Map24**
- **IGN**

Conclusion: pour des applications professionnelles, la gratuité est une illusion.

---

---

# API de bibliothèque logicielle

# API de bibliothèque logicielle

OpenLayers

ArcGIS API

MapFish API

MapGuide API

TileCache API

GeoServer API

ETC...



# API de bibliothèque logicielle

API applicative

API de bibliothèque logicielle

Développements  
spécifiques

Normes

# Normes

- Certaines API découlent de normes
  - WMS
  - WFS
  - WCS
  - WMTS
  - ....

En fait, les normes sont sous-jacentes à l'API.

L'énorme avantage des **normes** est leur **interopérabilité.**

# API applicative

- Une API applicative permet l'accès à une application spécifique, qui elle-même peut être construite à partir d'autres API's.
- Dans le domaine du web mapping, les 2 buts principaux sont de pouvoir **accéder à des fonctions** de l'application de base et d'**accéder aux données** mises à disposition par l'application de base
  - [API SuisseMobile / Documentation](#)

# Exemple concret: [map.geo.admin.ch](http://map.geo.admin.ch)

API GeoAdmin: `geoadmin.js`

ExtJS – OpenLayers - GeoExt

Développements  
spécifiques

WMS – WMTS etc...

# Utilisation de l'API IGN: Pays d'autrefois

The screenshot shows a web browser window with the URL `vivlig.free.fr/`. The page title is "Pays d'autrefois en Vivarais-Lignon". Below the title, a subtitle reads: "Au détour des anciennes cartes postales des communes du Haut-Lignon (43) et du Haut-Vivarais (07)".

The main content is a map of the Vivarais-Lignon region. The map features several historical overlays: a red line representing the "Haute-Loire (43)" boundary, a yellow line for "Le Chambon-sur-Lignon (Haute-Loire)", and a blue line for "Ardèche (07)". The map is overlaid on a modern IGN map. A "Toolbox" is visible in the top right of the map area, containing a table with actions and keyboard shortcuts:

Action	Clavier
(Dé)Zoomer >	← →
Déplacer >	← → ↑ ↓

At the bottom of the browser window, there is a footer with the text: "Bas débit - Problèmes techniques - Mentions légales - Liens amis - Remerciements - Contact".

---

# Commentaires

---

- Choix pléthorique
- Pas de standardisation au niveau des API's grand publics
- ... mais une certaine uniformisation des fonctions
- API applicative permet de diffuser l'application de base
- Attention aux licences d'utilisation



---

**Merci de votre attention !**

---

**Camptocamp SA**

**[cedric.moulet@camptocamp.com](mailto:cedric.moulet@camptocamp.com)**