

# Programmables Overlay Network

## Didier Parigot



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Démonstration d'une  
Application de Publication et d'Inscription  
de services géo référencés  
développé avec le logiciel  
PON,  
Réseaux de recouvrement programmable

Programmable Overlay Network



# Réseau en pair à pair d'offres et de demandes de services géo référencés

L'objectif du réseau est

d'offrir une architecture **dynamique et décentralisée** pour faciliter les mises en relation des **offres** et des **demandes** de services géo référencés

Les acteurs du réseaux sont:

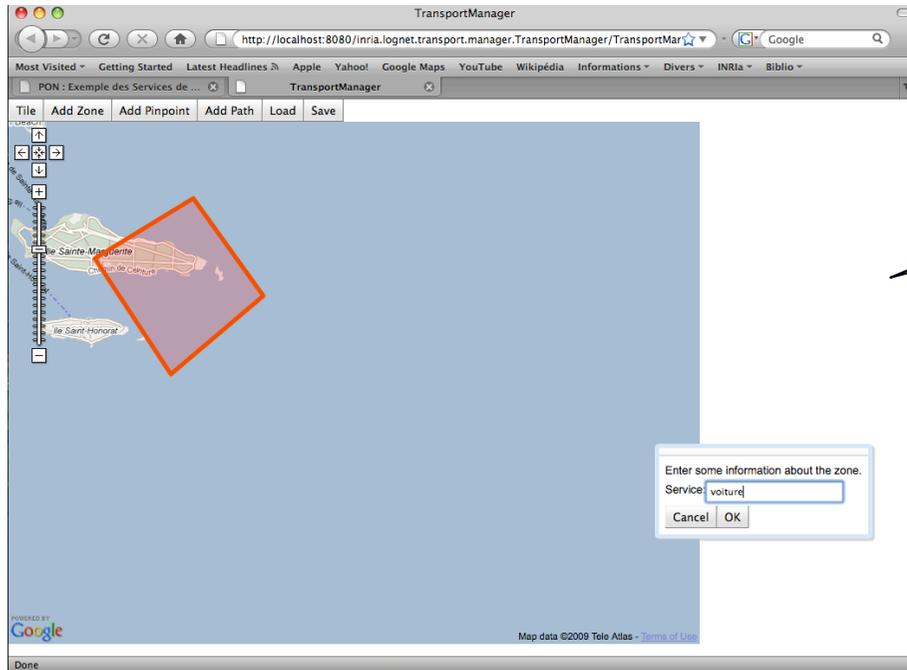
des **fournisseurs** de services qui **publient** des services  
des **clients** qui **recherchent** et **souscrivent** à ces services

La solution s'appui

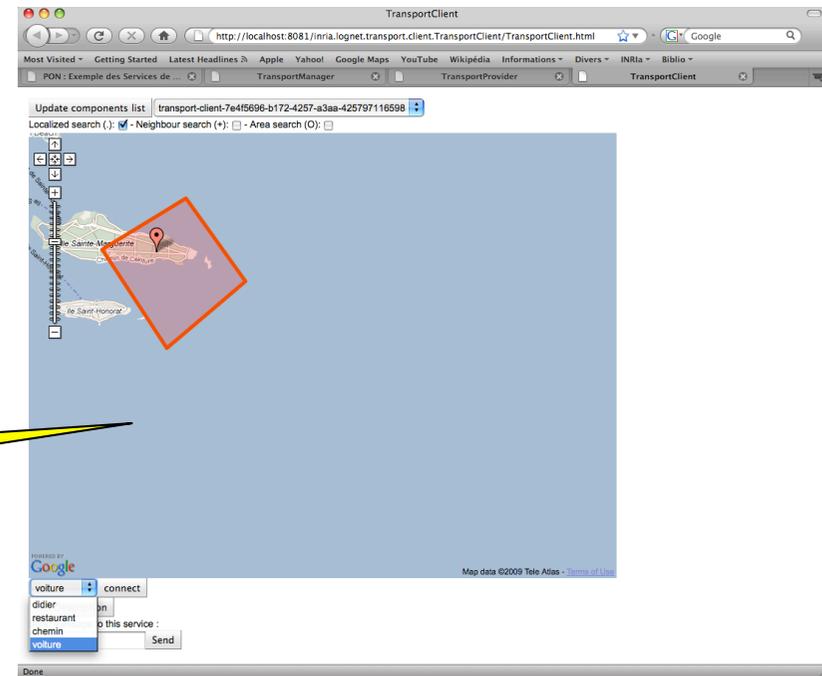
pour l'**exécution**, sur une Architecture Orientée Service

pour l'**organisation** et le **stockage**, sur un réseau de recouvrement en pair à pair (Chord)

# Interface Web pour le fournisseur et le client

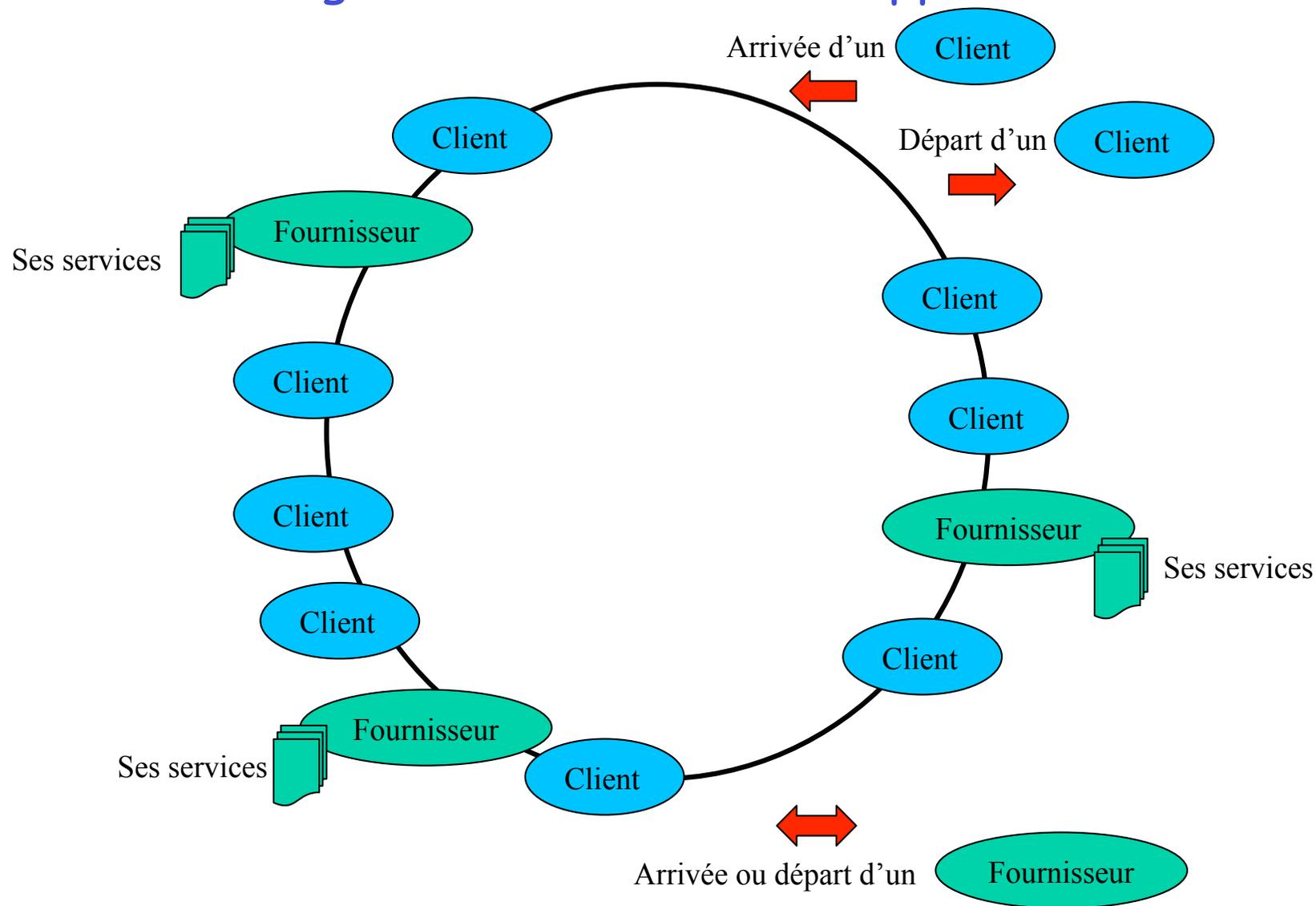


Fournisseur

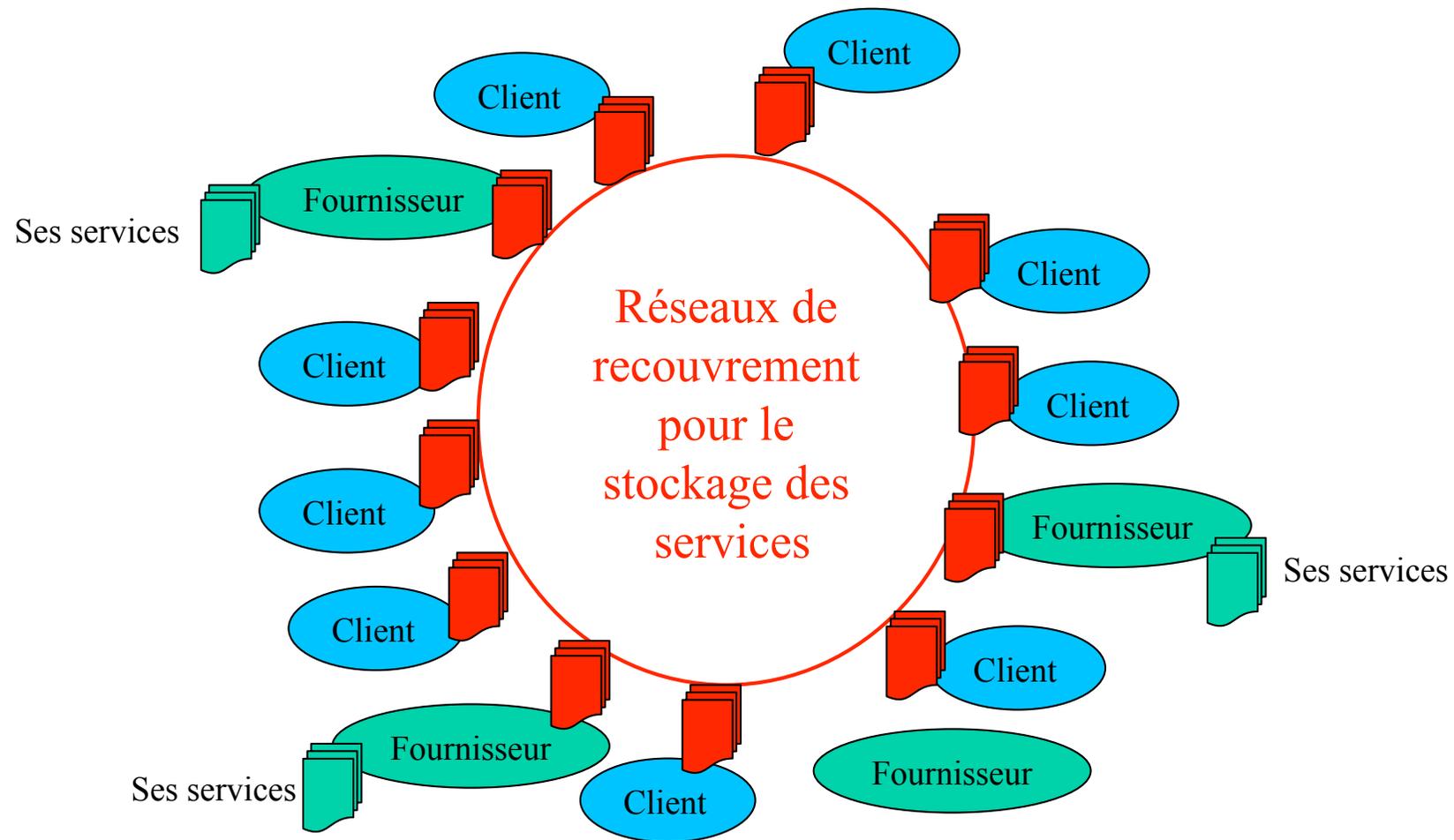


Client

# Organisation ouvert de l'application



# Stockage des services en pair à pair



# Chargement de l'application

Sous gforge.inria à l'adresse

<http://gforge.inria.fr/frs/download.php/22767/transport-1.3.zip>

INRIAGforge: SmartTools Software Factory: Project Filelist

http://gforge.inria.fr/frs/?group\_id=461&release\_id=3733

Version	File Name	Size	Downloads	Date
1.0.0	pinet-src.jar	15 KB	112 Any	2008-07-02 14:42
<b>PON Examples</b>				
transport-1.3	transport-1.3.zip	5.27 MB	2 Any	2009-08-14 15:13
chat-1.1	chat-1.1.zip	4.29 MB	0 Any	2009-07-23 14:00
<b>Programmable Overlay Network</b>				
1.6.2	pon-1.6.2.zip	846 KB	0 Any	2009-07-22 16:09
pon-1.6.1	pon-1.6.1.zip	843 KB	0 Any	2009-07-10 14:18
1.5.2				2008-10-22 09:24

Done

Charger ce fichier

# Installation et lancement

## Dossier transport

Ouvrir cette page dans un navigateur



# Lancement de l'application

```
Terminal — xterm — 73x10
pon:~ dparigot$ pwd
/Users/dparigot
pon:~ dparigot$ cd Desktop/transport/
pon:transport dparigot$ pwd
/Users/dparigot/Desktop/transport
pon:transport dparigot$ . run.sh
-bash: .: filename argument required
.: usage: . filename [arguments]
pon:plugins dparigot$
```

Lancement d'un prestataire et d'un client

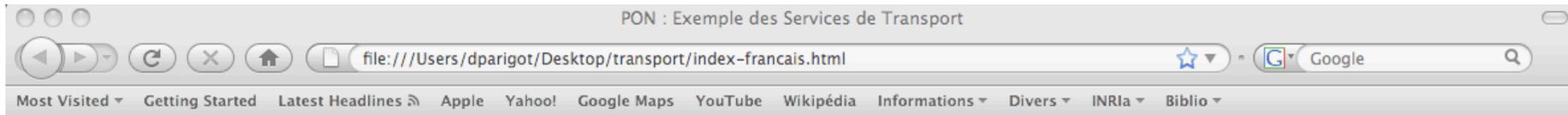
```
java -Dosgi.bundles=org.eclipse.osgi.services,org.eclipse.osgi
manager)) enter in communication with <ComponentsManager(componentsManager)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] Connecting output : connectTo to ComponentsManager(componentsManager)
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] Connecting output : exit to ComponentsManager(componentsManager)
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] Connecting output : disconnect to ComponentsManager(componentsManager)
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Local DS] newConnexion ComponentsMa
nager -> transport-manager
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] Updating connection with <transport-manager(transport-manager)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] UpdateConnect : Connecting output : quit
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] UpdateConnect : Connecting output : disconnect
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] Updating connection with <ComponentsManager(componentsManager)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] UpdateConnect : Connecting output : connectTo
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] UpdateConnect : Connecting output : exit
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] UpdateConnect : Connecting output : disconnect
```

Prestataire

```
java -Dosgi.bundles=org.eclipse.osgi.services,org.eclipse.osgi
2b-41bf-8e3c-976ff506fcd6(transport-client)] Connecting output : disconnect to C
omponentsManager(componentsManager)
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Local DS] newConnexion ComponentsMa
nager -> transport-client-9f7dc7a1-742b-41bf-8e3c-976ff506fcd6
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] Updating connection with <transport-client-9f7dc7a1-742b-41bf-8e3c-976
ff506fcd6(transport-client)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] UpdateConnect : Connecting output : quit
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] UpdateConnect : Connecting output : disconnect
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-client-9f7dc7a1-74
2b-41bf-8e3c-976ff506fcd6(transport-client)] Updating connection with <Component
sManager(componentsManager)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-client-9f7dc7a1-74
2b-41bf-8e3c-976ff506fcd6(transport-client)] UpdateConnect : Connecting output :
connectTo
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-client-9f7dc7a1-74
2b-41bf-8e3c-976ff506fcd6(transport-client)] UpdateConnect : Connecting output :
exit
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-client-9f7dc7a1-74
2b-41bf-8e3c-976ff506fcd6(transport-client)] UpdateConnect : Connecting output :
disconnect
```

Client

# Ouverture des interfaces Web



## PON : Exemple des Services de Transport

### Exécuter l'exemple

Ouvrez un terminal et lancez le script run.sh (linux). Deux xterm s'ouvrent et exécutent deux plateformes PON en parallèle.

Chacun de ces plateformes ont lancé un composant permettant de démarrer des composants transport-provider. Dans votre navigateur, ouvrez les trois URLs dans des onglets différents : [Transport Manager](#), [Transport Provider](#) et [Transport Client](#).

### Transport Manager

Dans TransportManager, cliquez sur Add Zone.

Entrez un polygone, et lorsque vous avez fini, cliquez sur End Add.

Un pop up apparait pour entrer le nom du composant qui sera créé.

### TransportProvider

Le composant hello créé est de type transport-provider. Dans l'onglet TransportProvider, faites un Refresh de la liste de composant et hello devrait apparaitre.

Hello est normalement sélectionné, saisissez une description dans le composant, par exemple "Hello World", puis cliquez sur setDescription.

### TransportClient

TransportClient tourne sur une autre JVM et ne connait pas les services proches de sa position. Cliquez sur la carte, où le polygone que vous avez saisi est défini.

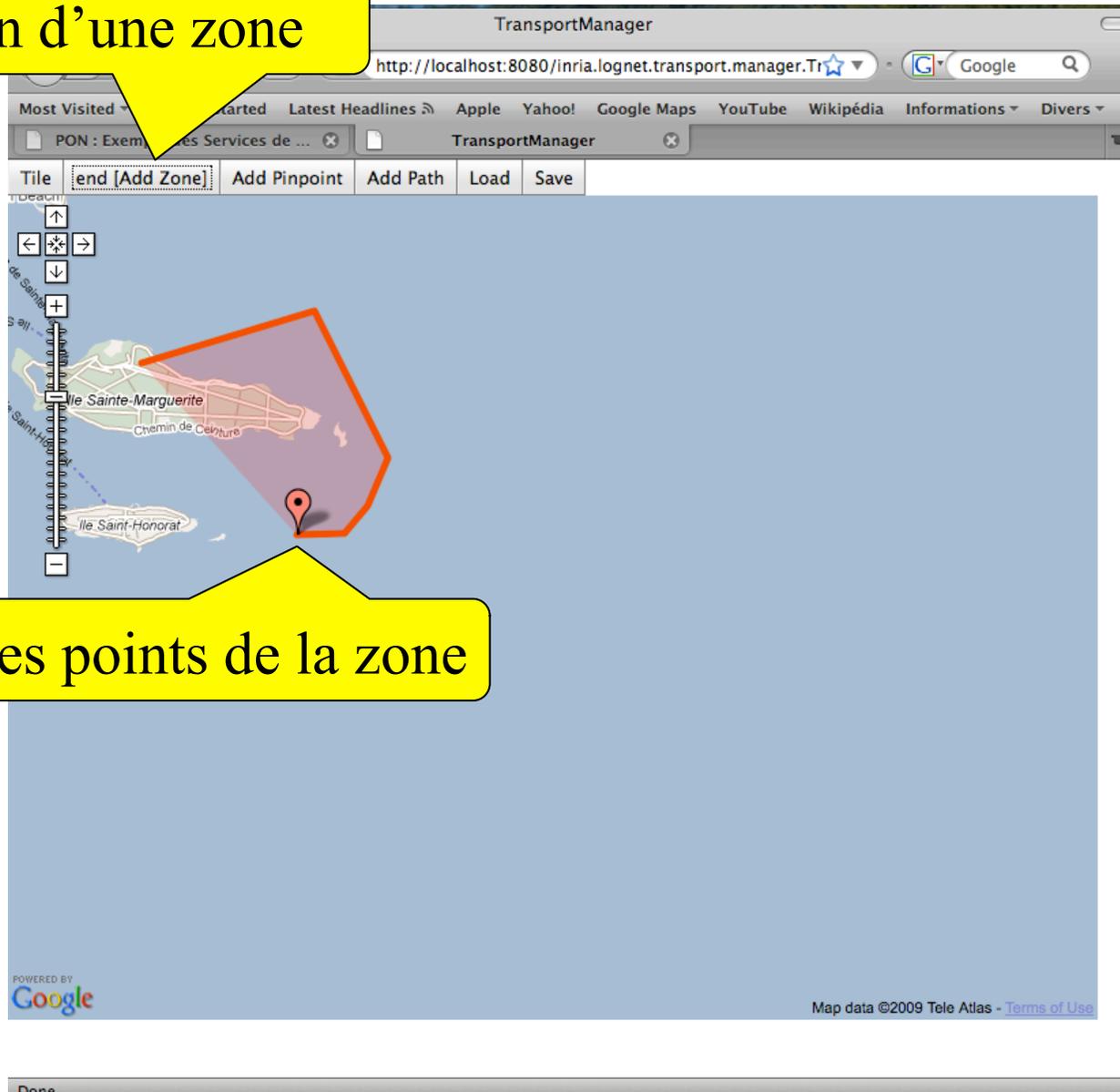
Ouvrir la page TransportManager

# Création et publication d'un service

The screenshot shows the TransportManager web application interface. The browser address bar displays `http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportMar`. The application menu includes options like 'Tile', 'Add Zone', 'Add Pinpoint', 'Add Path', 'Load', and 'Save'. A map of Ile Sainte-Marguerite is shown with a red-outlined polygon highlighting a specific area. A yellow callout box points to this area with the text 'Création d'un service défini par une zone'. A dialog box is open, prompting the user to 'Enter some information about the zone.' The 'Service' field contains the text 'voiture|'. A yellow callout box points to this field with the text 'Donner un nom au service'. Another yellow callout box points to the 'OK' button in the dialog with the text 'Valider'. The status bar at the bottom of the application shows 'Done'.

# Création service

Définition d'une zone



Définir les points de la zone

# Création service

Fin de la définition de la zone

The screenshot shows a web browser window with the TransportManager application. The browser's address bar shows the URL 'http://inria.lognet.transport.manager.Tr...'. The application interface includes a menu bar with options: 'Tile', 'Add Zone', 'Add Pinpoint', 'Add Path', 'Load', and 'Save'. The main area is a map of the Île de la Sainte-Marguerite, with a red polygon highlighting a specific zone. A dialog box is open in the foreground, titled 'Enter some information about the zone.', with a 'Service:' label and an empty text input field. Below the input field are 'Cancel' and 'OK' buttons. A yellow callout bubble points to the 'Service:' input field with the text 'Définir le nom du service'. The bottom of the browser window shows 'Done'.

Définir le nom du service

# Création et publication d'un service

TransportManager

http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportManager.html

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PON : Exemple des Services de ... TransportManager

Tile Add Zone Add Pinpoint Add Path Load Save

Création d'un service localisé par un point

Enter some information about the pinpoint.  
Service: restaurant  
Cancel OK

Donner un nom au service

Valider

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Done

# Publication d'un service

TransportManager

http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportManager.html

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PON : Exemple des Services de ... TransportManager

Title Add Zone Add Pinpoint **Add Path** Load Save

Création d'un service localisé par un chemin

Enter some information about the path.  
Service: chemin  
Cancel OK

Donner un nom au service

Valider

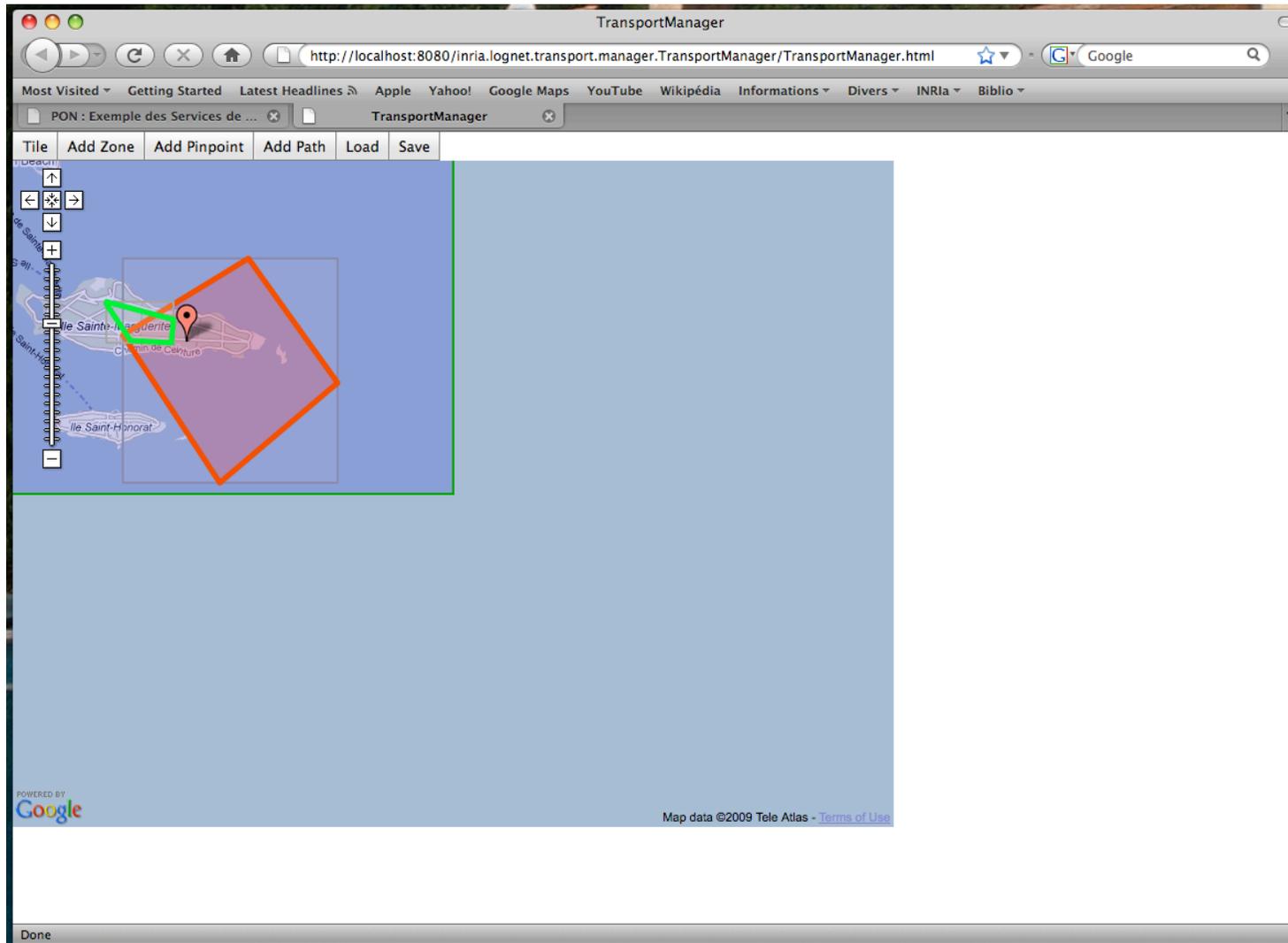
POWERED BY Google

Map data ©2009 Tele Atlas - Terms of Use

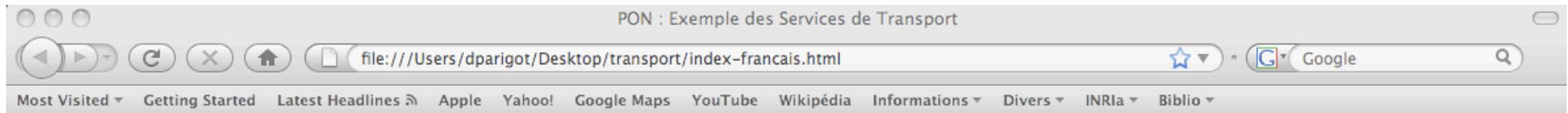
Done

# Publication d'un service

## Ensemble des services



# Gestion des informations associées aux services



## PON : Exemple des Services de Transport

### Exécuter l'exemple

Ouvrez un terminal et lancez le script run.sh (linux). Deux xterm s'ouvrent et exécutent deux plateformes PON en parallèle.

Chacun de ces plateformes ont lancé un composant permettant de démarrer des composants transport-provider. Dans votre navigateur, ouvrez les trois URLs dans des onglets différents : [Transport Manager](#), [Transport Provider](#) et [Transport Client](#).

### Transport Manager

Dans TransportManager, cliquez sur Add Zone.

Entrez un polygone, et lorsque vous avez fini, cliquez sur End Add Zone.

Un pop up apparait pour entrer le nom du composant qui sera

Ouvrir la page Transport Provider

### TransportProvider

Le composant hello créé est de type transport-provider. Dans l'onglet TransportProvider, faites un Refresh de la liste de composant et hello devrait apparaitre.

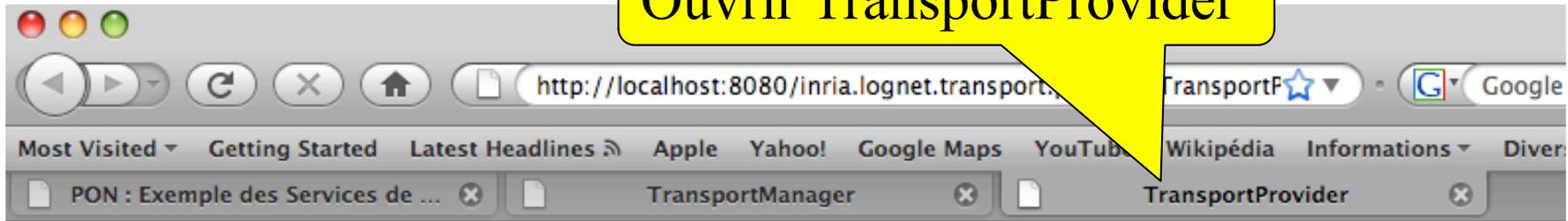
Hello est normalement sélectionné, saisissez une description dans le composant, par exemple "Hello World", puis cliquez sur setDescription.

### TransportClient

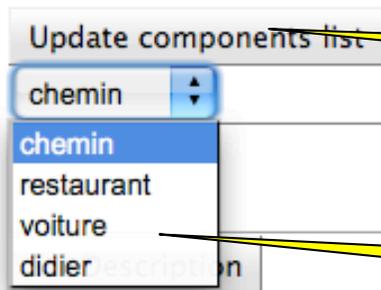
TransportClient tourne sur une autre JVM et ne connait pas les services proches de sa position. Cliquez sur la carte, où le polygone que vous avez saisi est défini.

# Gestion des services publiés

Ouvrir TransportProvider



Mise à jour des services publiés



Liste des services

Done

# Définir l'information d'un service

The screenshot shows a web browser window titled "TransportProvider" with the URL <http://localhost:8080/inria.lognet.transport.provider.TransportP>. The browser's address bar and search bar are visible. The page content includes a "Update components list" button, a dropdown menu with "voiture" selected, a text input field containing "vulog", and a "Set Description" button. Three yellow callout boxes with black text point to these elements: "Choisir un service" points to the dropdown menu, "Définir l'information" points to the text input field, and "Valider" points to the "Set Description" button. A "Done" button is visible at the bottom of the browser window.

# Suscriptions à des services

TransportClient

http://localhost:8081/inria.lognet.transport.client.TransportClient/TransportClient.html

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PON : Exemple des Services de ... TransportManager TransportProvider TransportClient

Update components list transport-client-7e4f5696-b172-4257-a3aa-425797116598

Localized search (.)  - Neighbour search (+)  - Area search (O)

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connect

Get Description

Send message to this service :

Send

Done

Ouvrir l'interface TransportClient

# Rechercher des services

The screenshot shows a web browser window titled "TransportClient" with the URL `http://localhost:8081/inria.lognet.transport.client.TransportClient/TransportClient.html`. The browser's address bar and tabs are visible. Below the browser, there is a search interface with a dropdown menu showing "transport-client-7e4f5696-b172-4257-a3aa-425797116598". Below this, there are search options: "Localized search (.):  - Neighbour search (+):  - Area search (O): . A map is displayed with a red location pin and a yellow callout box pointing to it containing the text "Cliquez sur la carte". Below the map, there is a search input field with a dropdown menu showing "voiture" selected. A yellow callout box points to this dropdown with the text "Choisir un service". Below the search input, there is a "Send" button. At the bottom of the browser window, the text "Done" is visible.

Update components list: transport-client-7e4f5696-b172-4257-a3aa-425797116598

Localized search (.):  - Neighbour search (+):  - Area search (O):

Cliquez sur la carte

La liste des service accessibles

Choisir un service

voiture connect  
didier  
restaurant  
chemin  
voiture

Send

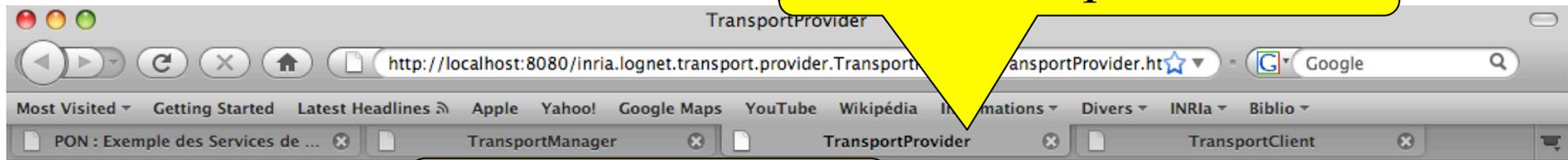
Done

# S'inscrire à un service

The screenshot shows a web browser window titled "TransportClient" with the URL `http://localhost:8081/inria.lognet.transport.client.TransportClient/TransportClient.html`. The browser's address bar and tabs are visible. The main content area displays a map of Paris with a red location pin on Ile Sainte-Marguerite. A yellow callout box labeled "définir sa position" points to the map. Below the map, there is a "GetDescription result" dialog box showing "vulog" and an "OK" button, with a yellow callout box labeled "valider" pointing to it. At the bottom of the page, there is a service selection dropdown menu currently set to "voiture", a "connect" button, and a "Get Description" button. A yellow callout box labeled "choisir un service" points to the dropdown menu. Another yellow callout box labeled "s'inscrire" points to the "connect" button. A third yellow callout box labeled "récupérer l'information" points to the "Get Description" button. Below the "Get Description" button, there is a text input field for "Send message to this service:" and a "Send" button.

# Définition de l'information d'un service

Ouvrir TransportProvider



Update components list

restaurant

Choisir un service

repas à 15 euros

Définir l'information

Set Description

Valider

# S'inscrire à un service

The screenshot shows a web browser window titled "TransportClient" with the URL `http://localhost:8081/inria.lognet.transport.client.TransportClient/TransportClient.html`. The browser's address bar and tabs are visible. The application interface includes a search bar with the text "Update components list" and a dropdown menu showing "transport-client-7e4f5696-b172-4257-a3aa-425797116598". Below the search bar, there are radio buttons for "Localized search (.)", "Neighbour search (+)", and "Area search (O)". A map of the Île de la Sainte-Marguerite is displayed, showing a path and several red location pins. At the bottom of the page, there is a "restaurant" dropdown menu, a "connect" button, a "Get Description" button, and a "Send message to this service" section with a text input field and a "Send" button. A small dialog box in the center of the screen displays "GetDescription result: repas à 15 euros" and an "OK" button. Five yellow callout boxes with black text are overlaid on the screenshot, pointing to specific elements: "Ouvrir TransportClient" points to the browser window; "Choisir un service" points to the "restaurant" dropdown; "S'inscrire" points to the "connect" button; "Récupérer l'information" points to the "Get Description" button; and "Valider" points to the "OK" button in the dialog box.

Ouvrir TransportClient

Choisir un service

S'inscrire

Récupérer l'information

Valider

# Définir l'information d'un service

The screenshot shows a web browser window with the URL `http://localhost:8080/mina.log`. The browser's address bar and tabs are visible. The main content area contains a form with the following elements:

- A button labeled "Update components list".
- A dropdown menu with the text "chemin" and a blue arrow icon.
- A text input field containing "4 km".
- A button labeled "Set Description".

Four yellow callout boxes with black text and arrows pointing to the form elements provide instructions:

- "Ouvrir TransportProvider" points to the browser window.
- "Choisir un service" points to the "chemin" dropdown menu.
- "Définir l'information" points to the "4 km" text input field.
- "Valider" points to the "Set Description" button.

# S'inscrire à un service

The screenshot shows a web browser window titled "TransportClient" with the URL `http://localhost:8081/inria.lognet.transport.client.TransportClient/TransportClient.html`. The browser tabs include "PON : Exemple des Services de ...", "TransportManager", "TransportProvider", and "TransportClient". The application interface features a search bar with the text "Update components list" and a dropdown menu showing "transport-client-7e4f5696-b172-4257-a3aa-425797116598". Below the search bar, there are checkboxes for "Localized search (.)", "Neighbour search (+)", and "Area search (O)". A map of the Île de Saint-Marguerite is displayed, with a red pin and a green rectangle highlighting a specific area. A small dialog box titled "GetDescription result:" shows "4 km" and an "OK" button. At the bottom, there is a "Send message to this service" section with a text input field containing "chemin" and a "connect" button, and a "Send" button. Yellow callout boxes with black text are overlaid on the image, pointing to various elements: "Ouvrir TransportClient" points to the browser window; "Choisir un service" points to the search bar; "S'inscrire" points to the "connect" button; "Valider" points to the "OK" button in the dialog box; and "Récupérer l'information" points to the "Get Description" button.

# Modifier l'information d'un service

The screenshot shows a web browser window with the URL `http://localhost:8080/inria.lognet.tr`. The browser tabs include "PON : Exemple des Services de ..." and "TransportManager". The main content area displays a form for updating a service. A yellow callout box labeled "Ouvrir TransportProvider" points to the browser window. Another yellow callout box labeled "Choisir un service" points to a dropdown menu with "restaurant" selected. A third yellow callout box labeled "Définir la nouvelle information" points to a text input field containing "repas à 10 euros". A fourth yellow callout box labeled "Valider" points to a "Set Description" button.

Ouvrir TransportProvider

Choisir un service

Définir la nouvelle information

Valider

# Publication d'une nouvelle information aux clients

Le client inscrit à ce service est averti de cette nouvelle information

Notification that the description has changed to:  
from restaurant: repas à 10 euros

OK

Valider

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chemin connect

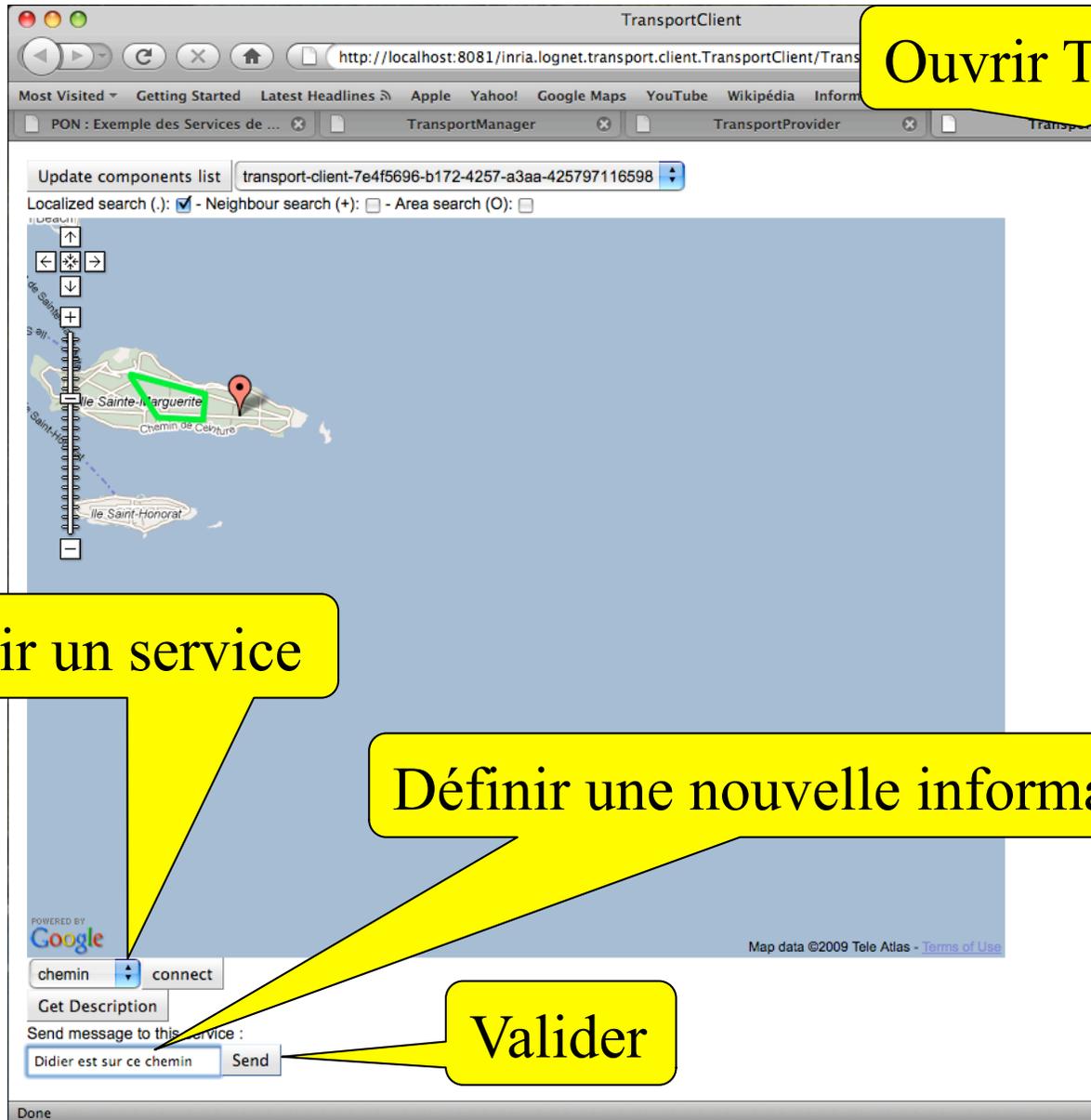
Get Description

Send message to this service :  
Send

Done

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# Information défini par un client pour un service



Ouvrir TransportClient

Choisir un service

Définir une nouvelle information

Valider

# Réception de l'information défini par un client



Le prestataire de service est averti de la nouvelle information



Accepter

Fermer

# Réception de la nouvelle information par le client

The screenshot shows a web browser window titled "TransportClient" with the URL "http://localhost:8081/inria.lognet.transport.client.TransportClient". The browser has several tabs open, including "TransportManager", "TransportProvider", and "TransportClient". The main content area displays a map of the "Ile Sainte-Marguerite" area. A notification dialog box is overlaid on the map, containing the text: "Notification that the description has changed to: from chemin: Didier est sur ce chemin". Below the text is an "OK" button. A yellow callout box points to the "OK" button with the word "Valider".

Ouvrir TransportClient

Le client est averti de la nouvelle information

Valider

# Sauvegarde des services publiés

The screenshot shows a web browser window titled "TransportManager" with the URL `http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportManager.html`. The browser's address bar and tabs are visible. The application interface includes a menu bar with options like "Tile", "Add Zone", "Add Pinpoint", "Add Path", "Load", and "Save". A map of a coastal area is displayed, with a red polygon highlighting a specific region. A yellow callout bubble points to the "Save" button with the text "Sauvegarde des services créés". Another yellow callout bubble points to the map area with the text "Copier dans un fichier". A third yellow callout bubble points to a "Close" button at the bottom of a popup window with the text "Fermer". The popup window contains the following JSON data:

```
Please copy and paste this content to a file, you will be able to load this in future.
{"name": "restaurant", "latLng": "43.517061986894845,7.058200836181"}
{"name": "didier", "latLngs": [{"latLng": "43.52166770320007,7.046527862548828"}, {"latLng": "43.52166770320007,7.072911111111111"}], "name": "chemin", "latLngs": [{"latLng": "43.521543229003617,7.045841217041016"}, {"latLng": "43.51955160693377,7.056311111111111"}], "name": "voiture", "latLngs": [{"latLng": "43.51780888369251,7.0484161376953125"}, {"latLng": "43.52639753236828,7.067111111111111"}]}
```

# Chargement de services sauvegardés

The screenshot shows the TransportManager web application in a browser window. The browser address bar displays `http://localhost:8080/inria.lognet.transport.manager.TransportM`. The application interface includes a menu bar with options: Tile, Add Zone, Add Pinpoint, Add Path, Load, and Save. A map of the Île de la Réunion is visible, featuring a red polygon and a green path. A yellow callout bubble points to the 'Load' button in the menu, containing the text 'Chargement de services'. Another yellow callout bubble points to a large white text input area, containing the text 'Coller à partie du fichier'. A third yellow callout bubble points to a 'Load' button at the bottom of the input area, containing the text 'Valider'. The bottom of the browser window shows 'Done' and 'Map data ©2009 Tele Atlas - Terms of Use'.

Fin

Fermer toutes les fenêtres

# Application de Publication/Inscription de services géoréférencés

Développé avec un Programmable Overlay Network

Voir le site du logiciel

[www-sop.inria.fr/members/Didier.Parigot/pon](http://www-sop.inria.fr/members/Didier.Parigot/pon)

