

# Datao, un outil visuel de...

définition, présentation & navigation  
de graphes sémantiques

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# 1- Rappels sur le Web Sémantique

# Philosophie du Web Sémantique

- **Innover / être agile** sur les données
  - Sortir la donnée des silos :
    - Exposer les données
    - Mutualiser les données
  - Faciliter la compréhension des données :
    - Exposer la sémantique des données
  - Décorrélér les données des usages :
    - La donnée existe au-delà de ses usages actuels

# Technologies du Web Sémantique

- Un web de données
- Un format pivot
- Des outils:
  - De conception de modèles (++++)
  - D'extraction de données (+)
  - De définition de requêtes (-)
  - De présentation de données (--)
  - De navigation (---)

# Datao : un outil visuel

- Les Navigateurs **ILLUSTRENT** le Web.
- Datao **veut ILLUSTRER** le Web Sémantique:
  - Présenter les données et leur sens
  - Faciliter leur interrogation
  - Naviguer sémantiquement

2- **Voir** le Web Sémantique ?

# Philosophie de Datao

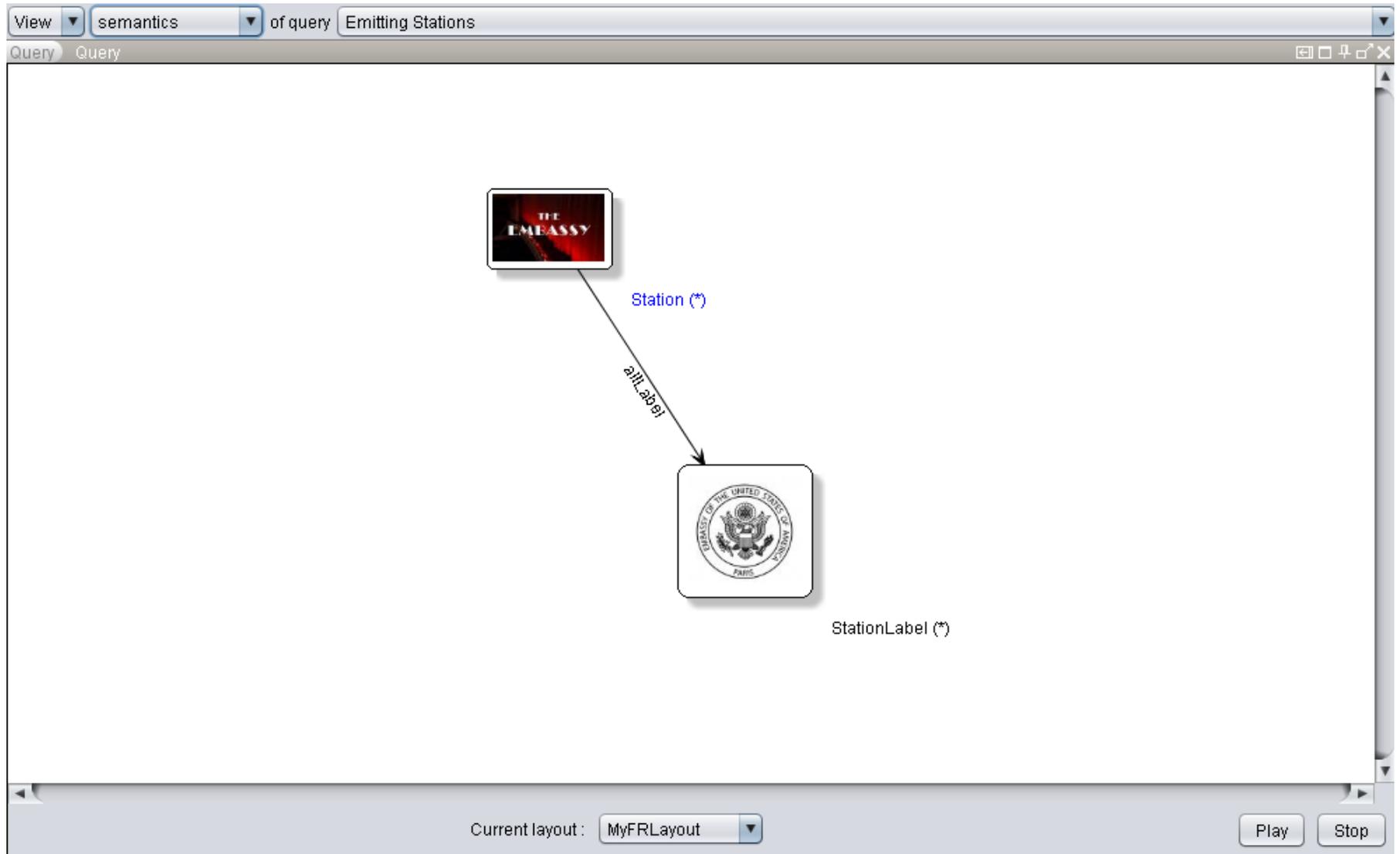
- Outil générique de
  - définition /
  - présentation /
  - publication /
  - navigationde graphs sémantiques.

# Public visé

- Experts domaine
- Hobbyistes
- Utilisateurs finaux

# 3- IHMs de Datao

# Une copie d'écran de Datao



# Une ligne de commande graphique...

The image shows a graphical user interface for a query system. At the top, there is a main navigation bar with three dropdown menus: "View", "answers", and "of query". The "View" dropdown is currently open, showing options: "View", "Edit", "data sources", "data models", "semantics", "voice explanation", "HTML template", "HTML binding", and "answers". The "answers" dropdown is also open, showing a list of items: "Station's location", "5- Location of the replacement", "Emitting Stations" (highlighted), "1 - Which part replaces which?", "Wikileaks.{rdf,nt,n3,svg,...} details", "Tags", "Part details", and "...". The "of query" dropdown is open, showing a list of items: "Emitting Stations" (highlighted), "Station's location", "5- Location of the replacement", "Emitting Stations", "1 - Which part replaces which?", "Wikileaks.{rdf,nt,n3,svg,...} details", "Tags", "Part details", and "...". The "in domain" dropdown is open, showing a list of items: "Wikileaks" (highlighted), "A380", "Scheduled maintenance", "A340", "A350", "With Fridge connection", "Vegetarian food", and "Wikileaks".

View

View

Edit

answers

data sources

data models

semantics

voice explanation

HTML template

HTML binding

answers

of query

Emitting Stations

Station's location

5- Location of the replacement

Emitting Stations

1 - Which part replaces which?

Wikileaks.{rdf,nt,n3,svg,...} details

Tags

Part details

...

in domain

Wikileaks

A380

Scheduled maintenance

A340

A350

With Fridge connection

Vegetarian food

Wikileaks

# ... commande l'application ...

View **answers** of query **Emitting Stations** in domain **Wikileaks**

Answers **Answers**

Table **RDF** JSON Graph Map Google

(  LIMIT:  ) (  DISTINCT ) (  LANG: **en** )

Station	StationLabel
<All>	<All>
http://river.styx.org/www/2010/12/cablegraph#RUEHRO	"Rome"
http://river.styx.org/www/2010/12/cablegraph#RUEHGH	"Shanghai"
http://river.styx.org/www/2010/12/cablegraph#RUEHRL	"Berlin"
http://river.styx.org/www/2010/12/cablegraph#RUEHDIR	"Rpodubai"
http://river.styx.org/www/2010/12/cablegraph#MEXICO	"Mexico"
http://river.styx.org/www/2010/12/cablegraph#RUEHRH	"Riyadh"
http://river.styx.org/www/2010/12/cablegraph#BAKU	"Baku"
http://river.styx.org/www/2010/12/cablegraph#RUEHRB	"Rabat"
http://river.styx.org/www/2010/12/cablegraph#STATE	"State"
http://river.styx.org/www/2010/12/cablegraph#JEDDAH	"Jeddah"
http://river.styx.org/www/2010/12/cablegraph#RUEHFR	"Paris"
http://river.styx.org/www/2010/12/cablegraph#RUEHGB	"Baghdad"
http://river.styx.org/www/2010/12/cablegraph#PESHAWAR	"Peshawar"
http://river.styx.org/www/2010/12/cablegraph#BEIJING	"Beijing"
http://river.styx.org/www/2010/12/cablegraph#RUEHSO	"Sao paulo"
http://river.styx.org/www/2010/12/cablegraph#RUEHSM	"Stockholm"
http://river.styx.org/www/2010/12/cablegraph#RUEHSH	"Shenyang"
http://river.styx.org/www/2010/12/cablegraph#CONAKRY	"Conakry"
http://river.styx.org/www/2010/12/cablegraph#RUEHSG	"Santiago"
http://river.styx.org/www/2010/12/cablegraph#RUEHSI	"Tbilisi"
http://river.styx.org/www/2010/12/cablegraph#ROME	"Rome"
http://river.styx.org/www/2010/12/cablegraph#RUEHSB	"Harare"
http://river.styx.org/www/2010/12/cablegraph#VIENNA	"Vienna"
http://river.styx.org/www/2010/12/cablegraph#RUEHFRA	"Paris"
http://river.styx.org/www/2010/12/cablegraph#RUEHBUL	"Kabul"
http://river.styx.org/www/2010/12/cablegraph#RUEHIT	"Istanbul"
http://river.styx.org/www/2010/12/cablegraph#RUEHII	"Islamabad"

Export to CSV

# ... et ainsi ...

View **answers** of query Emitting Stations in domain Wikileaks

Answers

Table

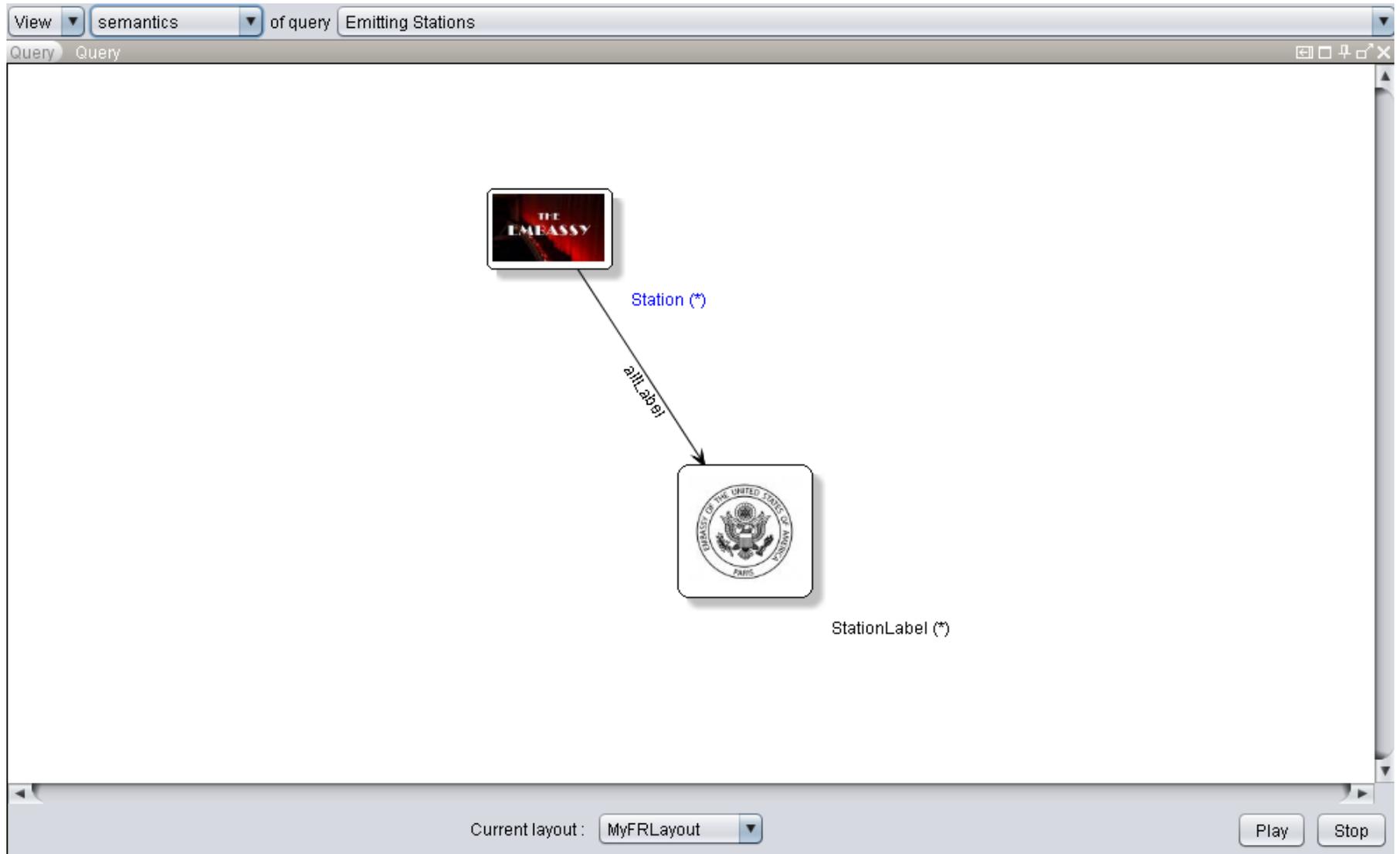
ph Map Google

(  DISTINCT ) (  LANG: en )

Station	StationLabel
<All>	<All>
http://river.styx.org/www/2010/12/cablegraph#RUEHRO	"Rome"
http://river.styx.org/www/2010/12/cablegraph#RUEHGH	"Shanghai"
http://river.styx.org/www/2010/12/cablegraph#RUEHRL	"Berlin"
http://river.styx.org/www/2010/12/cablegraph#RUEHDIR	"Rpodubai"
http://river.styx.org/www/2010/12/cablegraph#MEXICO	"Mexico"
http://river.styx.org/www/2010/12/cablegraph#RUEHRH	"Riyadh"
http://river.styx.org/www/2010/12/cablegraph#BAKU	"Baku"
http://river.styx.org/www/2010/12/cablegraph#RUEHRB	"Rabat"
http://river.styx.org/www/2010/12/cablegraph#STATE	"State"
http://river.styx.org/www/2010/12/cablegraph#JEDDAH	"Jeddah"
http://river.styx.org/www/2010/12/cablegraph#RUEHFR	"Paris"
http://river.styx.org/www/2010/12/cablegraph#RUEHGB	"Baghdad"
http://river.styx.org/www/2010/12/cablegraph#PESHAWAR	"Peshawar"
http://river.styx.org/www/2010/12/cablegraph#BEIJING	"Beijing"
http://river.styx.org/www/2010/12/cablegraph#RUEHSO	"Saopaulo"
http://river.styx.org/www/2010/12/cablegraph#RUEHSM	"Stockholm"
http://river.styx.org/www/2010/12/cablegraph#RUEHSH	"Shenyang"
http://river.styx.org/www/2010/12/cablegraph#CONAKRY	"Conakry"
http://river.styx.org/www/2010/12/cablegraph#RUEHSG	"Santiago"
http://river.styx.org/www/2010/12/cablegraph#RUEHSI	"Tbilisi"
http://river.styx.org/www/2010/12/cablegraph#ROME	"Rome"
http://river.styx.org/www/2010/12/cablegraph#RUEHSB	"Harare"
http://river.styx.org/www/2010/12/cablegraph#VIENNA	"Vienna"
http://river.styx.org/www/2010/12/cablegraph#RUEHFRA	"Paris"
http://river.styx.org/www/2010/12/cablegraph#RUEHBUL	"Kabul"
http://river.styx.org/www/2010/12/cablegraph#RUEHIT	"Istanbul"
http://river.styx.org/www/2010/12/cablegraph#RUEHII	"Islamabad"

Export to CSV

# ... de suite ...



# ... et ...

View semantics of query

Query Query

Emitting Stations

Station's location

5- Location of the replacement

Emitting Stations

1 - Which part replaces which?

Wikileaks.{rdf,nt,n3,svg,...} details

Tags

Part details

...

Station (\*)

StationLabel (\*)

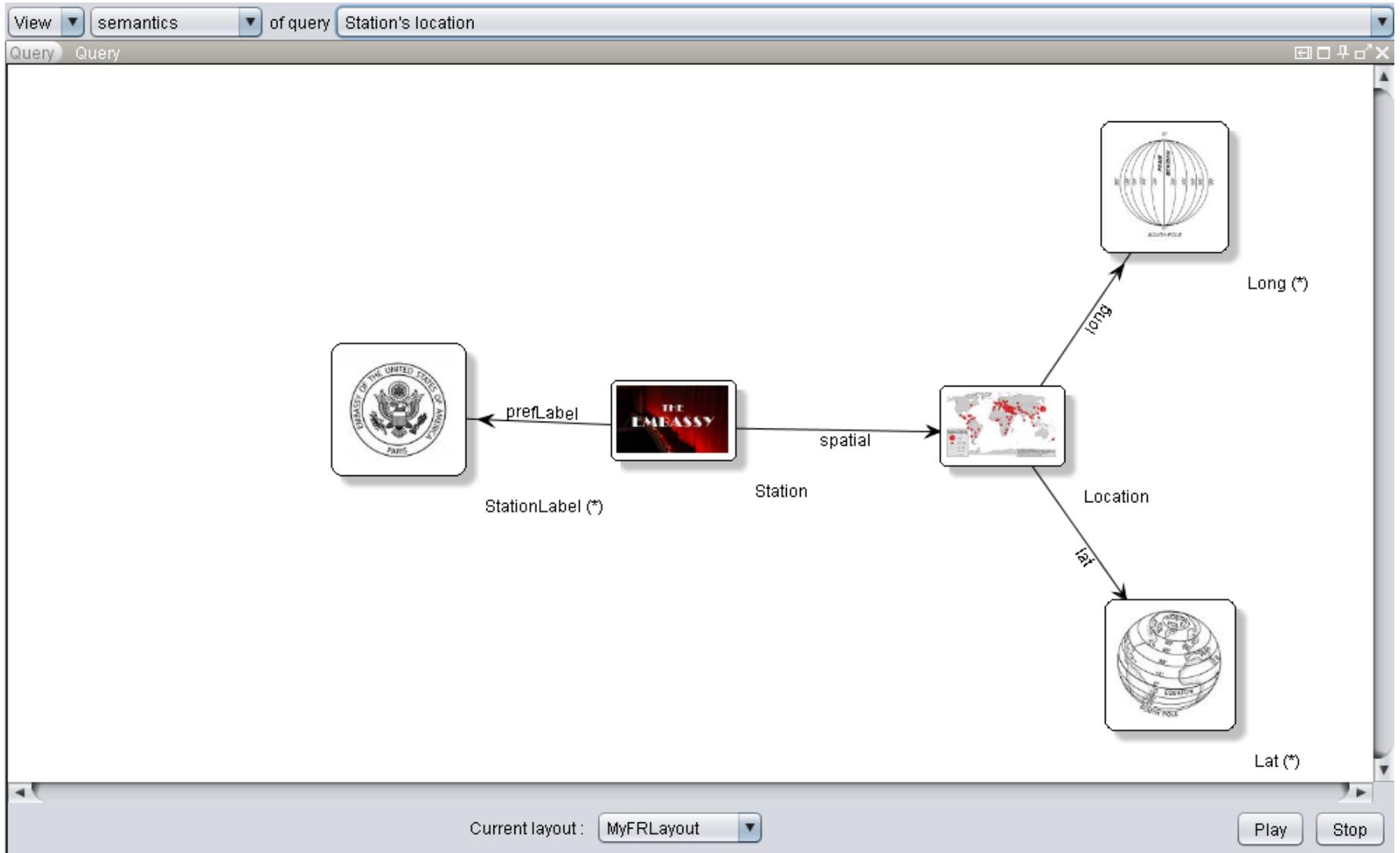


Current layout: MyFRLayout

Play Stop

The image shows a software interface with a menu on the left and a main workspace. The menu includes 'Station's location' and 'Station (\*)'. An arrow labeled 'StationLabel' points from the menu to a circular seal in the workspace. The seal is the official emblem of the US Embassy in Paris, featuring an eagle with a shield, holding an olive branch and arrows, with the text 'EMBASSY OF THE UNITED STATES OF AMERICA' and 'PARIS'. Below the seal is the label 'StationLabel (\*)'. At the bottom, there is a 'Current layout: MyFRLayout' dropdown and 'Play' and 'Stop' buttons.

# ... encore



Datao permet de :

# Organiser les sources de données d'un Web Sémantique en domaines

The screenshot displays a software interface for managing data sources in a semantic web domain. The window title is "data sources" and the domain is "A340".

**Left Panel: All ontologies**

- The SW
  - BBC by Virtuoso
  - US data : Census.gov
  - Projects
    - Data at SemanticWeb.org
  - A340
    - Stock numbers (data)
    - Stock (model)
    - Part replacement rules (data)
    - Part replacement rules (model)
  - Data
    - BBC by Talis
  - SYSTEM
  - Contexts
  - Semantic CVs

**Main Panel: Data Sources**

The main panel shows three data sources:

- A340**: Represented by an image of an airplane.
- Stock numbers (data)**: Represented by a small table icon.
- Part replacement rules (data)**: Represented by an icon showing a gear and arrows.

**Bottom Panel: Controls**

- Edit selected
- Reload pool
- Reset pool
- Redispatch graph
- New Ontologie

**Bottom Right:** Current Layout : MyFRLayout

# Organiser les sources de données d'un Web Sémantique en domaines

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    - Stock numbers (data)
    - Stock (model)
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**Bottom Panel: Controls**

- Edit selected
- Reload pool
- Reset pool
- Redispatch graph
- New Ontologie

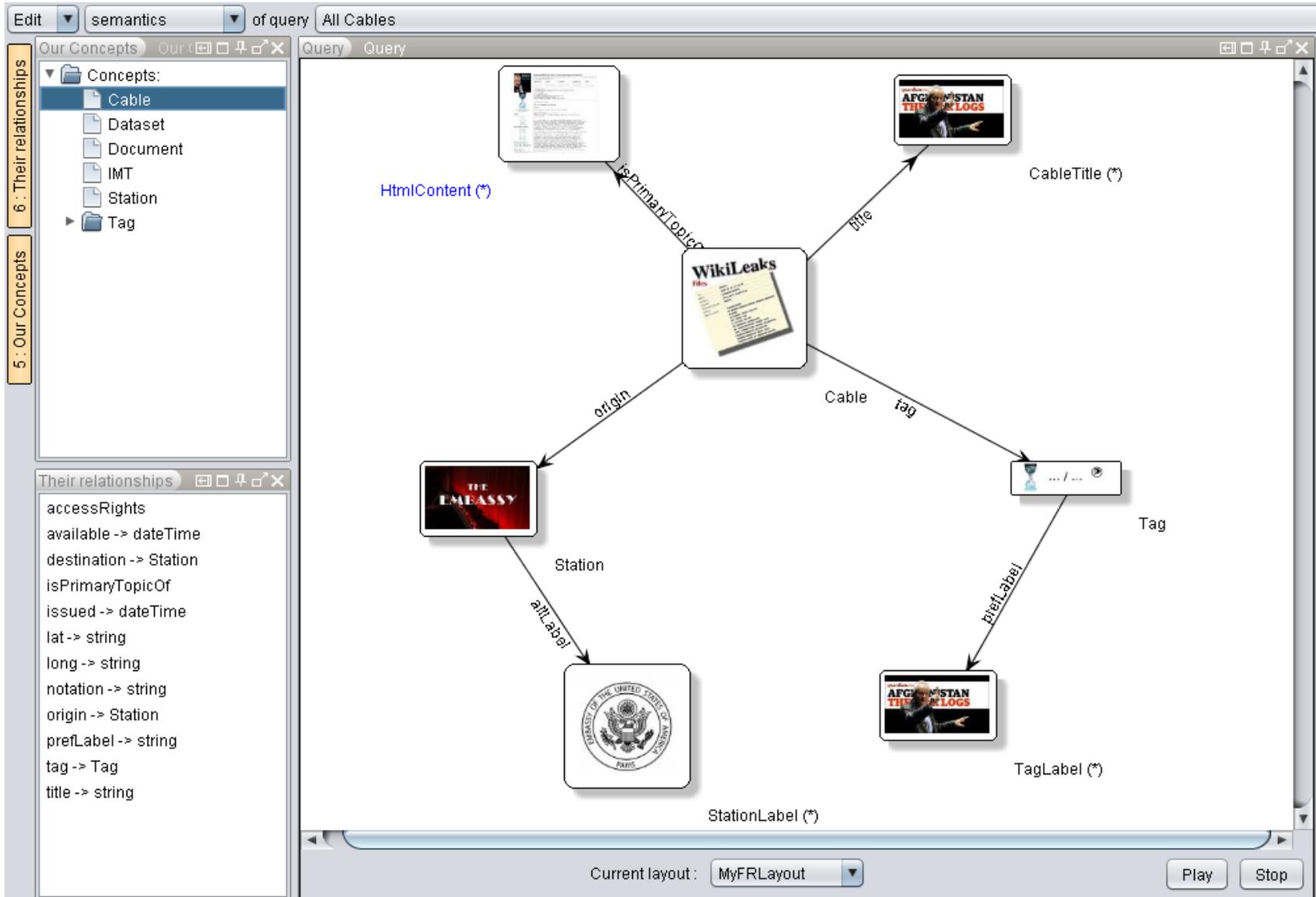
**Bottom Right:** Current Layout : MyFRLayout

# Parcourir et comprendre les ontologies d'un Web Sémantique

The screenshot displays a Semantic Web browser interface with the following components:

- Top Bar:** Edit | data models | of query | 6 - Which location may not be replacable because of stockout?
- Left Panel (1: All ontologies):**
  - The SW
    - BBC by Virtuoso
    - US data : Census.gov
    - Projects
      - Stock-aware part replacement
        - Part replacement rules (model)
        - Stock (model)
  - Data at SemanticWeb.org
    - A340
    - Data
    - BBC by Talis
    - SYSTEM
    - Contexts
    - Semantic CVs
- Bottom Left Buttons:** Edit selected, Reload pool, Reset pool, Redispach graph, New Ontologie
- Central Canvas:** A graph showing three nodes:
  - Stock (model):** Represented by a warehouse image.
  - Part replacement rules (model):** Represented by an image of mechanical parts.
  - Stock-aware part replacement:** Represented by a lightbulb icon.Arrows labeled "imports" point from the lightbulb node to both the warehouse and mechanical parts nodes.
- Right Panel (7: Classes):**
  - Concepts:
    - Items
      - ITEM
      - PNRDATA
      - PhysicalPart
- Bottom Right:** UseReasoner:  FastModel:  nativeStore:  remote:  Current Layout: MyFRLayout | Save to RDF File

# Définir une interrogation comme un graph sémantique



# Choisir une vue adaptée

View **answers** of query **Arteries for Anatomical Structures** in domain **DBpedia**

Answers **Answers**

**Table** RDF JSON Graph Map Google

(  LIMIT: 300 ) (  DISTINCT ) (  LANG: en )

AnAnatomicalStructure	RelatedArtery
<All>	<All>
"Right atrium"@en	"Right coronary artery"@en
"Pterygoid plexus"@en	"Maxillary artery"@en
"Inferior thyroid veins"@en	"Inferior thyroid artery"@en
"Occipital vein"@en	"Occipital artery"@en
"Kidney"@en	"Renal artery"@en
"Uncinate process of pancreas"@en	"Superior mesenteric artery"@en
"Brachiocephalic vein"@en	"Brachiocephalic artery"@en
"Pulmonary vein"@en	"Pulmonary artery"@en
"Meninges"@en	"Middle meningeal artery"@en
"Atrioventricular node"@en	"Atrioventricular nodal branch"@en
"Horizontal semicircular canal"@en	"Stylomastoid artery"@en
"Posterior semicircular canal"@en	
"Mastoid cells"@en	
"Superior semicircular canal"@en	
"Seminal vesicle"@en	"Inferior vesical artery"@en
"Urethra"@en	
"Superior gluteal veins"@en	"Superior gluteal artery"@en
"Buttocks"@en	
"Middle colic vein"@en	"Middle colic artery"@en
"Transverse cervical veins"@en	"Transverse cervical artery"@en
"Greater curvature of the stomach"@en	"Short gastric arteries"@en
"Ileocecal valve"@en	"Ileocolic artery"@en
"Ileocolic vein"@en	
"Maxillary sinus"@en	"Infraorbital artery"@en
"Molar (tooth)"@en	"Posterior superior alveolar artery"@en
"Thumb"@en	"Princeps pollicis artery"@en
"Submandibular gland"@en	"Glandular branches of facial artery"@en
"Gonadal vein"@en	"Gonadal artery"@en
"Abducens nucleus"@en	"Basilar artery"@en
"Superior ophthalmic vein"@en	"Ophthalmic artery"@en
"Inferior ophthalmic vein"@en	

Export to CSV



# Choisir une vue adaptée

Edit answers of query Emitting Stations in domain Wikileaks

Answers Answers

Table RDF JSON Graph Map HTML

(  LIMIT: 300 ) (  DISTINCT ) (  LANG: en )

://ClassGraph\_482381121879512]&binding=[Station=http://river.styx.org/www/2010/12/cablegraph%23RUEHFR]

Show all cables from: Paris

## .Wikileaks cables.

\* Cable " [IRAN: FRENCH COMMENTS ON DEALING WITH HOSTAGES](#) "  
From: [Paris](#)  
Tags:



**KEEP US STRONG**  
HELP WIKILEAKS KEEP GOVERNMENTS OPEN

Viewing cable 09PARIS1097, IRAN: FRENCH COMMENTS ON DEALING WITH HOSTAGES

If you are new to these pages, please read an introduction on the structure of a cable as well as how to di them with others. See also the FAQs

Reference ID	Created	Released	Classification	Origin
09PARIS1097	2009-08-12 14:02	2010-12-02 15:03	SECRET	Embassy

VZCZCXYZ0021  
OO RUEHWEB

# Associer un graph et sa vue...

The screenshot displays a web application interface with two main panels. The left panel shows a graph with a central 'WikiLeaks' node. Edges connect it to 'HTMLContent (\*)', 'CableTitle (\*)', 'origin', 'Cable', 'Station', and 'Tag'. Further nodes include 'StationLabel (\*)' (via 'Station'), 'TagLabel (\*)' (via 'Tag'), and 'Afg-Pakistan' (via 'Cable'). The right panel shows a rendered view titled '.Wikileaks cables.' with a list of cables and details for '09ISLAMABAD1152'.

**Graph Structure:**

- WikiLeaks (Central Node)
- HTMLContent (\*) (Edge to CableTitle)
- CableTitle (\*) (Edge to Cable)
- origin (Edge to Station)
- Cable (Edge to Tag)
- Station (Edge to StationLabel via Station)
- Tag (Edge to TagLabel via TagLabel)
- Afg-Pakistan (Edge to Cable)

**Rendered View: .Wikileaks cables.**

- \* Cable "[SPAIN'S OPPOSITION PARTIDO POPULAR: RAJOY FIRMLY](#)"  
From: [Madrid](#)
- \* Cable "[U.S. REMOVAL OF PAKISTAN RESEARCH REACTOR FUEL ON](#)"  
From: [Islamabad](#)  
Tags:

**Viewing cable 09ISLAMABAD1152**

If you are new to these pages, please read them with others. See also the [FAQ](#):

Reference ID	Created
09ISLAMABAD1152	2009-05-11

VZCZCXRO3997  
PP RUEHLH RUEHPW  
DE RUEHIL #1152 147163Z  
ZNY SSSSS ZZH  
P 271632Z MAY 09  
FM AMEMBASSY ISLAMABAD  
TO RUEHC/SECSTATE WASHDC  
INFO RUEHBUL/AMEMBASSY KARACHI  
RUEHLO/AMEMBASSY LONDON

# ... par un mapping...

The screenshot displays a web development tool interface with several panels:

- Query Panel:** Shows a diagram of a query structure. A box labeled "All Cables" is connected to a "Tag" box via an arrow labeled "preLabel". Another "Tag" box is connected to a "Station" box via an arrow labeled "altLabel". The "Station" box is further connected to a "DEPARTMENT OF THE ARMY" logo.
- Browser DOM Panel:** Displays the DOM tree for the page. The selected node is a `<td>` element within a `<tbody>` and `<table>` structure. The selected node's content is: `<div class="A" value=stationLabel href="http://datao.net/html/layout_4" href to query All Cables with variable $Station set to Station"> Embassy X (replaced by Station=>#altLabel>...)</div>`
- Template Panel:** Shows the rendered HTML output. It features a heading `<h2>.Wikileaks cables.</h2>`, a list of items: `* Cable "Bla bla"`, `From: Embassy X`, and `Tags:`. Below the text is a horizontal line, a globe image, and a small image of a person's face.
- Buttons:** "Save to Selected Layout", "View", "Show", "Comments", "Attributes", "Empty Text", "Play", "Stop".
- Footer:** "Read datao.net"

# ... défini via des menus

The screenshot displays a web design tool interface with three main panels:

- Left Panel (Wireframe):** Shows a layout with a top navigation bar, a main content area, and a footer. A tag labeled "Station" is positioned below a red "EMBASSY" logo. Arrows indicate relationships between elements, such as "preLabel" pointing to a top image and "altLabel" pointing to the "Station" tag.
- Middle Panel (Browser DOM):** Displays the DOM tree for the page. The selected element is a `td` within a `tbody` and `tr`. A context menu is open over this element, showing options: "HTML:", "Insert Tal Instruction", "Delete", and "Define Link". The "Insert Tal Instruction" option is expanded, showing a list of instructions: "For Each", "Follow All", "Overwrite By", "tal:Condition", and "Set Content". The "For Each" option is further expanded, showing a list of variables: "StationLabel", "Station", "TagLabel", "HtmlContent", "CableTitle", "Tag", and "Cable". The "Station" variable is currently selected.
- Right Panel (Template):** Shows a preview of the page layout. The main heading is **.Wikileaks cables.**. Below it, there is a list of items: "\* Cable", "From: [Embassy X](#)", and "Tags:". A blue horizontal line is visible below the "Tags:" label. At the bottom of the panel, there is a text input field containing "Read datao.net".

At the bottom of the interface, there are several controls: "Current layout:", "Play", "Stop", and a "Show" section with checkboxes for "Comments", "Attributes", and "Empty Text".

# Relier des graphs par des liens sémantiques...

HTML binding of query All Cables in domain Wikileaks

Query Query

Browser DOM Browser DOM

Template Template

Tag

Tag

Station

```
@tal:define=fromLineId string:${python:str(Cable)+'_block'};tagsLineId s  
TABLE  
@width=100%  
TBODY  
TR  
TR  
@tal:attributes=id fromLineId  
TD  
TD  
TD  
TD  
I (foreach Station)  
A  
@value=stationLabel  
@tal:attributes=href string:http://datao.net/htmlayout_4  
@href to query All Cables  
with variable $Station set to Station  
" Embassy X " (replaced by Station->#altLabel>...)  
TR  
...
```

Save to Selected Layout

View

Show

Comments  Attributes  Empty Text

Read datao.net

**.Wikileaks cables.**

* Cable	" >Bla bla "
From:	<a href="#">Embassy X</a>
Tags:	



# ...via des menus...

The screenshot displays a web design tool interface with several panels:

- Top Panel:** Includes a menu bar with "Edit", "HTML binding", and "of query". The main area shows "All Cables" in domain Wikileaks.
- Left Panel:** A "Query" panel showing a visual tree of elements. A "Tag" element is highlighted, with arrows pointing to "preLabel" and "Station".
- Center Panel:** A "Browser DOM" panel showing a tree structure of HTML elements. A context menu is open over a link element, with options: "HTML:", "Insert Tal Instruction", "Delete", and "Define Link". The selected element is: `@href to query All Cables with variable $Station set to Station`.
- Right Panel:** A "Template" panel showing a preview of the page content. It includes the heading **.Wikileaks cables.**, a list of items:
  - \* Cable "Bla bla"
  - From: [Embassy X](#)
  - Tags:Below the list are images of a globe and a person's face. At the bottom, there is a "Read datao.net" link.

# ...et une IHM

The screenshot displays a web browser window with a 'Create a link' dialog box open. The browser's address bar shows 'Wikileaks' and the current layout is 'MyFRLLayout'. The dialog box is divided into two main sections: 'TAL Vars' on the left and 'Select a request' on the right. The 'Select a request' section displays a diagram with nodes for 'All Cables', 'Cable', 'Station', and 'Tag', connected by arrows labeled 'origin', 'tag', and 'preLabel'. A 'BIND VARIABLE' button is visible near the 'Station' node. The browser's file explorer at the bottom shows a folder structure including 'WikiLeaks (data)'. The browser's status bar at the bottom shows 'Save'.

# Naviguer entre graphs sémantiques



A large blue arrow originates from the map in the left screenshot and points towards the detailed cable view in the right screenshot, indicating the navigation path.

View answers of query Cables by Embassy in domain Wikileaks

Answers

Table RDF JSON Graph Map Cables by Embassy

( LIMIT: 300 ) ( DISTINCT ) ( LANG: en )

test=[http://ClassGraph\_482381121879512]&binding=[Station=http://river.styx.org/www/2010/12/cablegraph%23RUEHFRA]

Show all cables from: Paris

## .Wikileaks cables.

- \* Cable "[- FRENCH MFA OFFICIAL SHARES VIEWS ON IRAN/IRAQ -](#)"  
From: [Paris](#)
- \* Cable "[- CHIRAC'S ENVOY TO IRAN -- WHAT'S PROMPTING THIS -](#)"  
From: [Paris](#)  
Tags:

KEEP US STRONG  
HELP WIKILEAKS KEEP GOVERNMENTS OPEN

**Viewing cable 07PARIS170, CHIRAC'S ENVOY TO IRAN -- WHAT'S PROMPTING THIS**

If you are new to these pages, please read an introduction on the structure of a cable as well as how to discuss them with others. See also the FAQ's

Reference ID	Created	Released	Classification	Origin
07PARIS170	2007-01-17 14:02	2010-11-29 12:12	SECRET	Embassy Paris

VZCZCXYZ0002  
OO RUEHWB

# 4- Démos

Une session typique



Created using **Wink**

Comment créer une « requête »?



Created using **Wink**

La donnée est sémantique.  
La vue est adaptée.



Created using **Wink**

Le Web Sémantique  
rencontre le Web.



Created using **Wink**

# Datao : le projet

# Bénéfices de Datao

- Une IHM unifiée pour la « consommation » de Webs Sémantiques :
  - Requêtage
  - Visualisation
  - Navigation
- Simple et graphique

# Etat d'avancement

- Version bêta
- Disponible en SaaS (via JavaWebStart)
- Des cas d'étude:
  - Airbus.
  - NASA.
  - WikiLeaks.
  - DBPedia.
  - Data.Gov.Uk
  - CensusUSA.
  - NewYorkTimes.
  - GeneID.
  - Cardiovascular.
  - DailyMed.
- Des fonctions avancées en développement

# Suite du projet

- **V1.0 en 2011 !!!**
- Une communauté d'utilisateurs
- Support commercial par la société ***Datao.net***
- Partenariats
- Cas d'études industriels
  
- Soutien et Financements !!!

# Pitch Marketing

- Point de rencontre entre IT et métier
- Courbe d'apprentissage ultra-basse
- Répond à 80% des besoins de consultation
- En phase avec la philosophie du Web Sémantique

# Contacts

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