

# «Integrated patent editing environment» (IPPEE)



## Présentation *API*

*par Johann Sievering*

21 novembre 2012

v01-02f



johann.sievering@social-in3.coop



# Contenu

- Avant-propos
- Objectifs
- Introduction
- Principes de base
- Architecture
- Exemples démonstratifs
- Questions - réponses





# Avant-propos

- Il existe un nombre impressionnant
  - d'institutions;
  - de groupes;
  - d'entreprises;
  - de recherches et de réalisations ;
  - d'inventions, de bonnes idées et d'excellentes stratégies ;
  - d'outils à disposition de tous ou très pointus.
- L'exploration du domaine des brevets est déjà bien avancée . . .



# Avant-propos

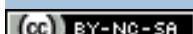
■ . . . alors la proposition IPÉE\* est-elle un «YAPA»

## «Yet Another Patent Application» ?

■ Ce qui différentie IPÉE\*

ce n'est pas seulement un environnement technologique

- C'est un système organique (par composant);
- C'est un environnement social favorisant les débats et le test des modèles;
- C'est une application évolutive.





# OBJECTIFS





# Objectifs

## ■ Projet

- Mise à disposition d'un environnement  
***d'assistance à la rédaction***  
et l'**analyse de brevets**

«**Integrated patent editing environment**» (IPEE)

## ■ Public

- Tout **inventeur** ayant une idée qu'il aimerait breveter.



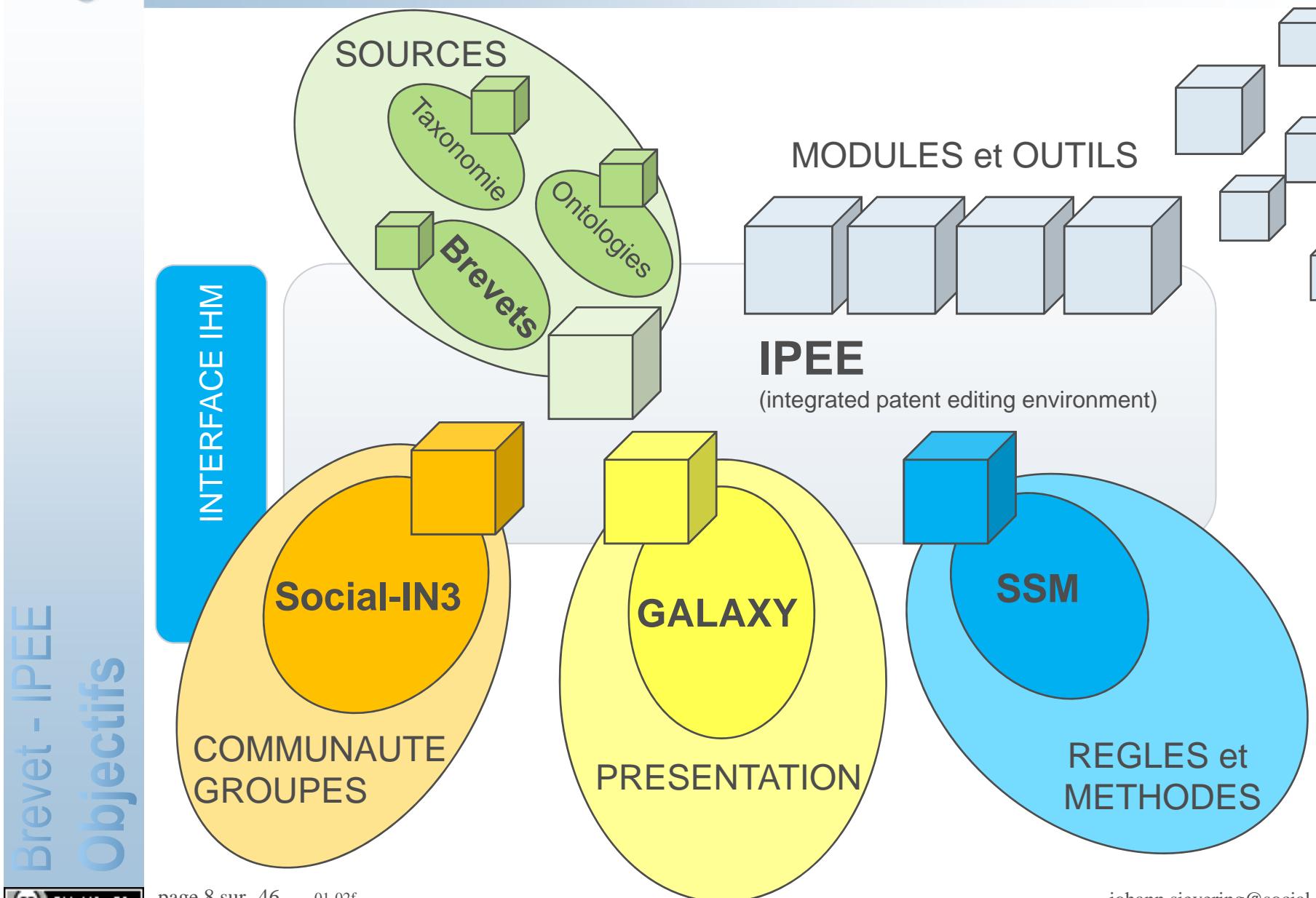
# Objectifs

## ■ Développements

- **Editeur de brevet et visualisation**
  - mise en forme semi-automatique, auto complétion, coloration syntaxique et sémantique.
- **Assistant de «brevetabilité»**  
*(nouveau, innovant, industrialisable)*
  - Recherche dans des bases de données externes, présentation graphique.
- **Assistant de rédaction de l'établissement de la demande de dépôt de brevet**
  - analyse **SSM**, normes, recherche, références légales.
- **Analyse syntaxique et sémantique**
  - Statistiques syntaxiques, extraction de concepts, présentation et mise en correspondances.



# Structure générale

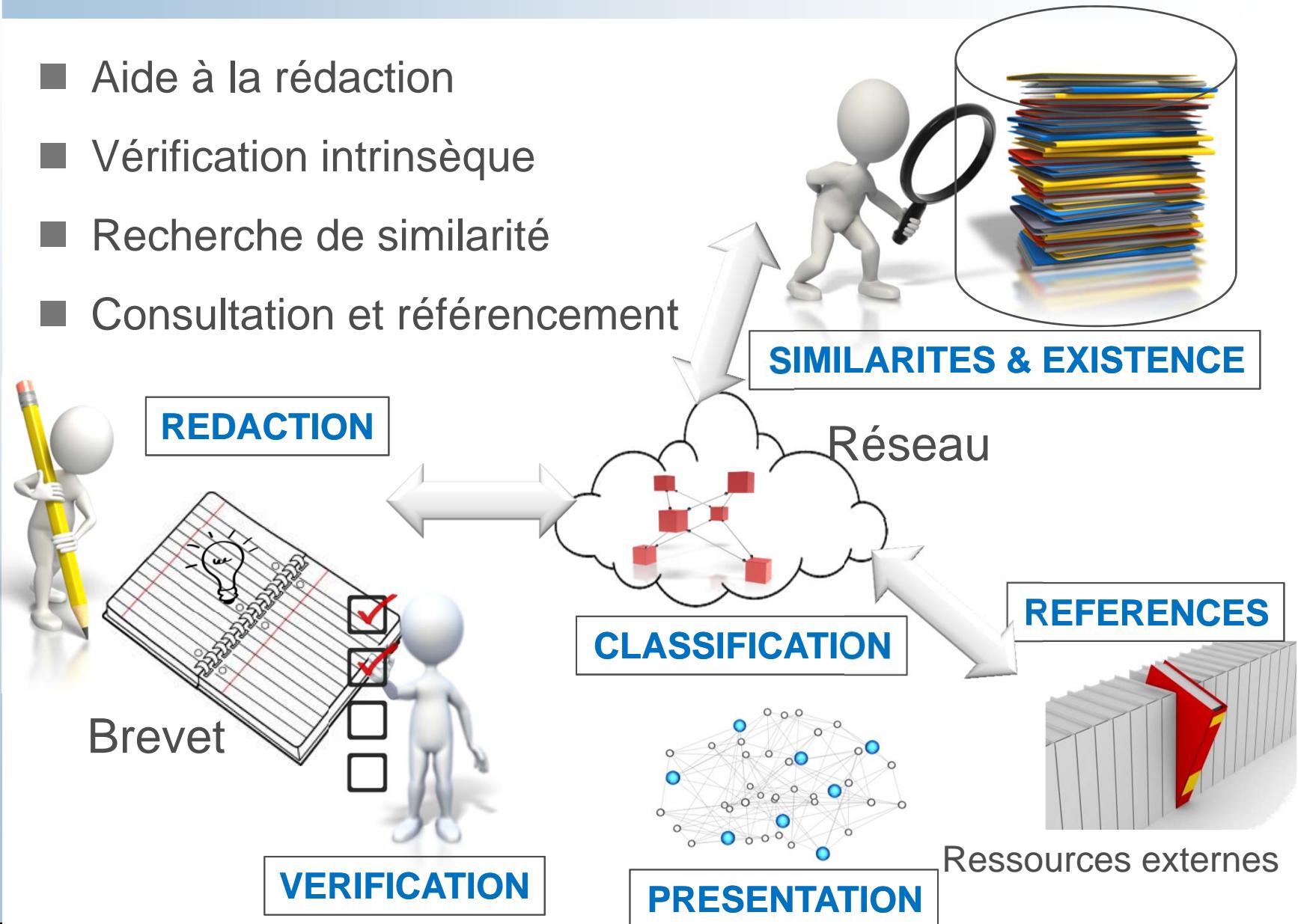




# Fonctionnalités



- Aide à la rédaction
- Vérification intrinsèque
- Recherche de similarité
- Consultation et référencement





# Technologie

■ Utilisation le plus possible des normes et des existants

■ Démonstrateur et test de concept

- IDE intégré Eclipse (plugins)
- Protégé (base de connaissance)
- Outils de visualisation (p. ex Jambalaya)
- Web service

■ Open source

■ Deuxième temps : «webapp»



# INTRODUCTION





# Existant

■ Etat de l'art, les dimensions explorées et proposées :  
(pas exhaustif)

- Couverture de recherche
- Référence aux documents
- Palette des fonctionnalités mises à disposition
- Import et d'export entre systèmes
- Indicateurs de pertinence des résultats
- Ergonomie
- Précisions des recherches
- Affichage des résultats



# Caractéristiques

■ Les systèmes actuels proposent communément les caractéristiques suivantes :

- **Données**

- Type : plein texte / image / dessins
- Analyse des bibliographies / des statuts légaux
- Analyse d'autres documents que des brevets
- Traduction
- Indexage
- Annotation

- **Outils**

- visualisation (arbres / réseaux / espace / cube)
- visualisation de comparaisons de textes avec marquage et annotation
- d'analyse / classification (statistiques / graphe / mots clés / relevance)
- de recherches simples et multiples
- de navigation (hyperlien / navigation)
- de comparaison et de synthèse

- **Actions**

- Opérateurs
  - Booléens
  - Opérateurs de proximité (principe des distances)
  - Opérateurs de pondération (importance / confiance)
- Extraction de concepts
- Persistance
- Importation / exportation
- Historique



# Sources

## ■ Sources de données et moteurs de recherche

- **WIPO**: World Intellectual Property Organization
- **EPO** : European Patent Office
- **PTO** : US Patent and Trademark office
- **USPTO** : United States Patent & Trademark Office
- **UKIPO** : United Kingdom Intellectual Property Office
- **CIPO** : Canadian Intellectual Property Office
- **JPO**: Japan Patent Office
- **Free Patents Online**
- **Google Patents**
- **PIUG** : Patent Information Users Group
- **I-MAK** : links to international patent offices and database
- **Patent Lens** : free public resource for patent system navigation worldwide
- **Patent Surf** : US Patents and their natural relationships
- **Patents.com**: free US and EP patent search sites on the web
- **Fresh Patents** : latest US patent applications
- **Department of Energy Patent Databases**
- **Pending Infringement Litigation**: free, searchable DB of patent and trademark infringement cases
- **DNA Patent Database**: patent claims biological classification, function or application



# Outils disponibles

## ■ Quelques outils à disposition

- **Patent Tools**
- **Independent Inventor Resources**
- **Dictionary.com** : variety of dictionaries and encyclopedias
- **Ask the Inventors!**
- **IP Frontline** : online magazine of Intellectual Property and Technology
- **Dissertation Abstracts Online** : subject, title, and author guide
- **Invent now** : National Inventors Hall of Fame website
- **Business & IndustryTM (B&I)** : facts, figures, and key events dealing with public and private companies
- **InventNET** : Inventors Network
- **InventorEd** : invention lists FTC has brought action against
- **Nondisclosure-agreement.com** : protect unpatented idea with NDA
- **National Inventor Fraud Center**: registered patent attorney's advise
- Comparateur de moteurs de recherche de brevets : **intellogist.com**
  - Patent\_Coverage\_Map



# Produits du marché

■ Nous ne sommes pas les seuls à proposer des environnements de recherche et de comparaison de brevets. Par exemples :

- Accelrys
- Aptuit
- Delphion
- DialogPRO
- EAST
- Espacenet
- FreePatentsOnline
- Google Patent Search
- JP-NETe
- MicroPatent
- Orbit.com
- PatBase
- PatBase Express
- Patent Lens
- QPat
- Qweb
- SumoBrain
- SureChem
- Surf-IP
- Thomson Innovation
- TotalPatent
- WIPS Global

**Et bien plus...**



# PRINCIPES DE BASE



# Principe

## ■ Source : chaîne de caractères

- **Analyse lexicale**
- **Analyse syntaxique**
  - Les mots par rapport à une phrase
  - Analyse des structures fonctionnelles
  - Règles de grammaires
- **Analyse sémantique**
  - Ce dont parle un énoncé
  - Construction d'un sens
  - Construction du sens : sème
- **Analyse pragmatique**
  - Signification des éléments du langage dans leur contexte



# Fonctionnalités IPÉE

## ■ Rédaction

- Saisie
- Aides

## ■ Vérification

- Couverture
- Complétude
- Exactitude
- Cohérence
- Non redondance

## ■ Recherche

- Similarité
- Existence

## ■ Outils collaboratifs



# Moteur de recherche

## ■ Attendu

- Résultats utilisables et interprétables par l'utilisateur
- Réponse dans un temps acceptable
- Traitement sans biais
- Indiquer toutes les références
- Permettre la navigation entre les résultats

## ■ Ce qui n'est pas possible

- Etre exhaustif
- Garantir la pertinence de tous les résultats
- Garantir que l'interprétation de la requête corresponde à l'intention
- Garantir que toutes les sources ont été consultées
- Garantir que toutes les données ont été évaluées lors du traitement



# Environnement de rédaction

- **Unicité** : le texte forme un tout homogène
- **Conformité** : le texte répond aux règles et contraintes légales
- **Complétude** : l'invention est couverte par la description
- **Exactitude** : pas d'ambiguïté dans la description
- **Non redondance** : aucune assertion n'est répétée ni du point de vue lexicale, ni du point de vue sémantique
- **Similarité** : deux descriptions possèdent des éléments lexicaux correspondants, deux descriptions ont des sens proche
- **Existence** : deux éléments possèdent des similarités fortes
- **Cohérence** : pas de contradiction
- **Concision** : seul l'essentiel est dit
- **Pertinent** : la description correspond bien à ce que l'inventeur veux dire

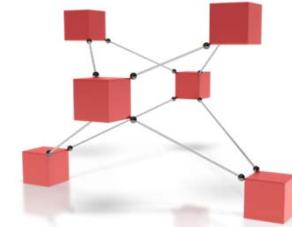


## Modèle SSM

Chaque propriété est prise en charge par un module (possibilité d'évolution)



# ARCHITECTURE



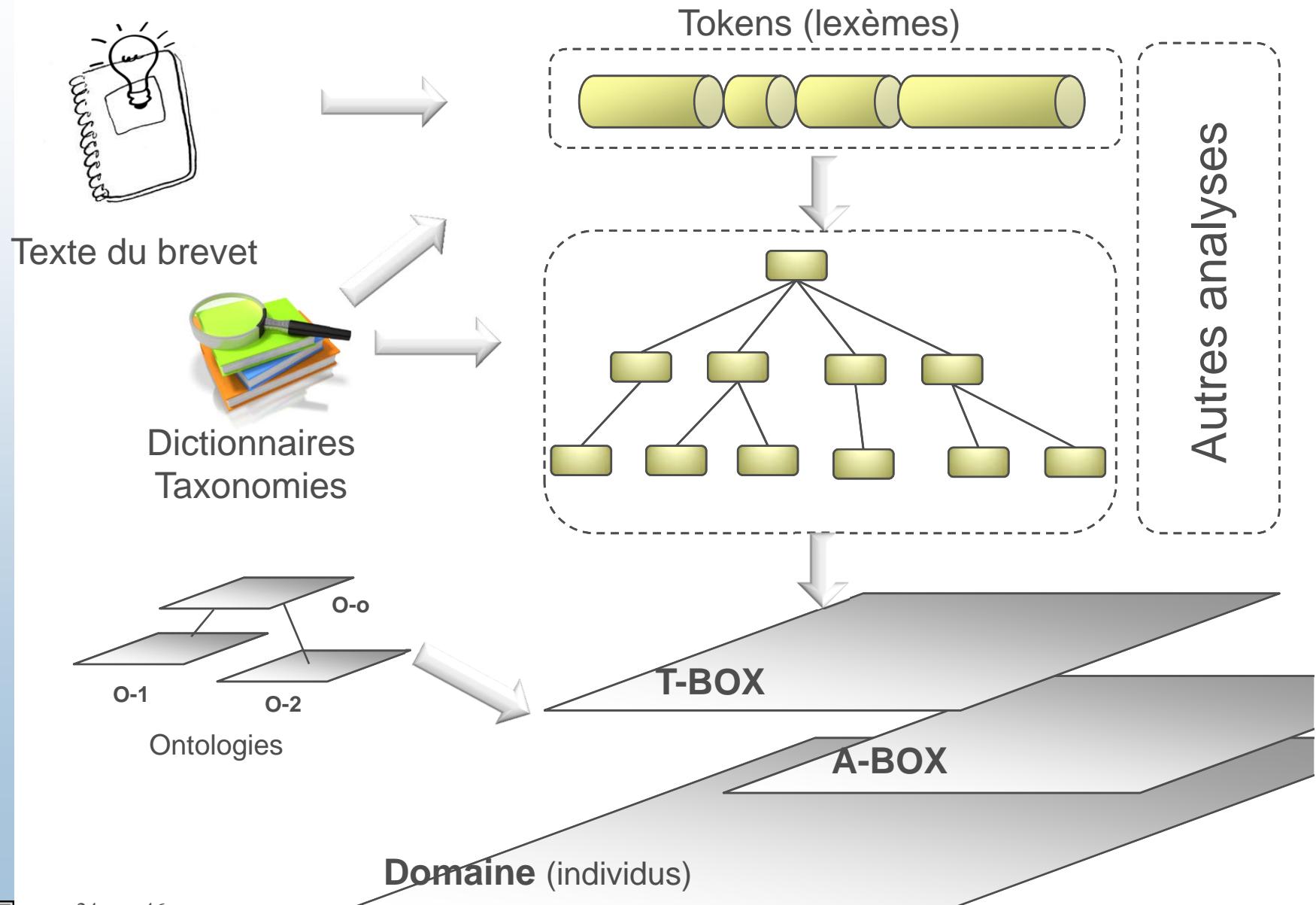


# Architecture

- Environnement informatique
- Utilisation des normes et standards
- Modulaire
  - Collaboration entre équipes
  - Module internes et externalisables
  - Délivrables incrémentaux
- Bases formelles
  - Logiques de description et modales
  - Modèles de calculs pour les analyses
  - RDF / RDFS – OWL
- Technologies
  - Java (Eclipse) : client lourd
  - Html-5 : webapp



# Architecture générale





# EXEMPLES DÉMONSTRATIFS

Base SSM





# Schéma de traitement des exemples



- Exemple 1
  - Comptage
  - Extraction de concepts
- Exemple 2
  - Comptage
  - Extraction de concepts
  - WordNet
- Exemple 3
  - Comptage
  - Extraction de concepts
  - Taxonomie et ontologie
  - Densité
- Exemple 4
  - Comptage
  - Extraction de concepts
  - Densité
  - Analyse recherche



# Exemple 1 : «collect money»



If I will collect enough money, I will buy a minibus. This gives to me and my family the possibility to make during vacation a trip around Europe. If such a situation will not appear, which means, I will not collect enough money, I will renovate my old car. This gives to me and my family the possibility to make during vacation a trip around my country.



# Exemple 1 : «collect money»



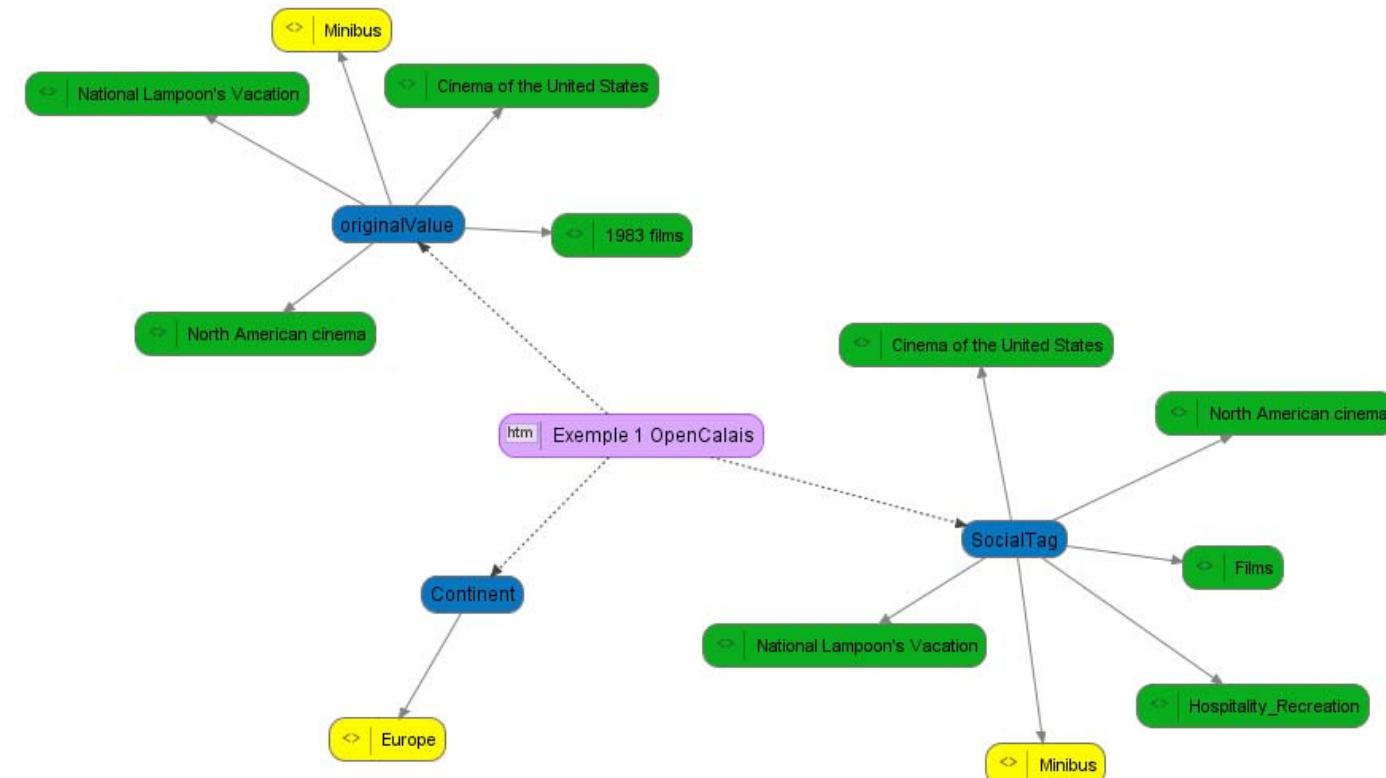
## Brevet - IPÉE Exemples démonstratifs

APPEAR	1
AROUND	2
BUY	1
CAR	1
COLLECT	2
COUNTRY	1
DURING	2
ENOUGH	2
EUROPE	1
FAMILY	2
GIVES	2
MAKE	2
MEANS	1
MINIBUS	1
MONEY	2
OLD	1
POSSIBILITY	2
RENOVATE	1
SITUATION	1
SUCH	1
TRIP	2
VACATION	2
<b>Total général</b>	<b>33</b>



# Exemple 1 : «collect money»

## Extraction des concepts





## Exemple 2 : «the racing stable»



In the racing stable there are following animals:  
Race – horses, which are the property of the stable, race – horses, which belong to the owners outside the stable, reproductive mares, which are the property of the stable, draught horses, which are the property of the stable, draught horses, which belong to the owners outside the stable and ponies, which belong to the owners outside the stable.



# Exemple 2 : «the racing stable»



## Brevet - IPÉE Exemples démonstratifs

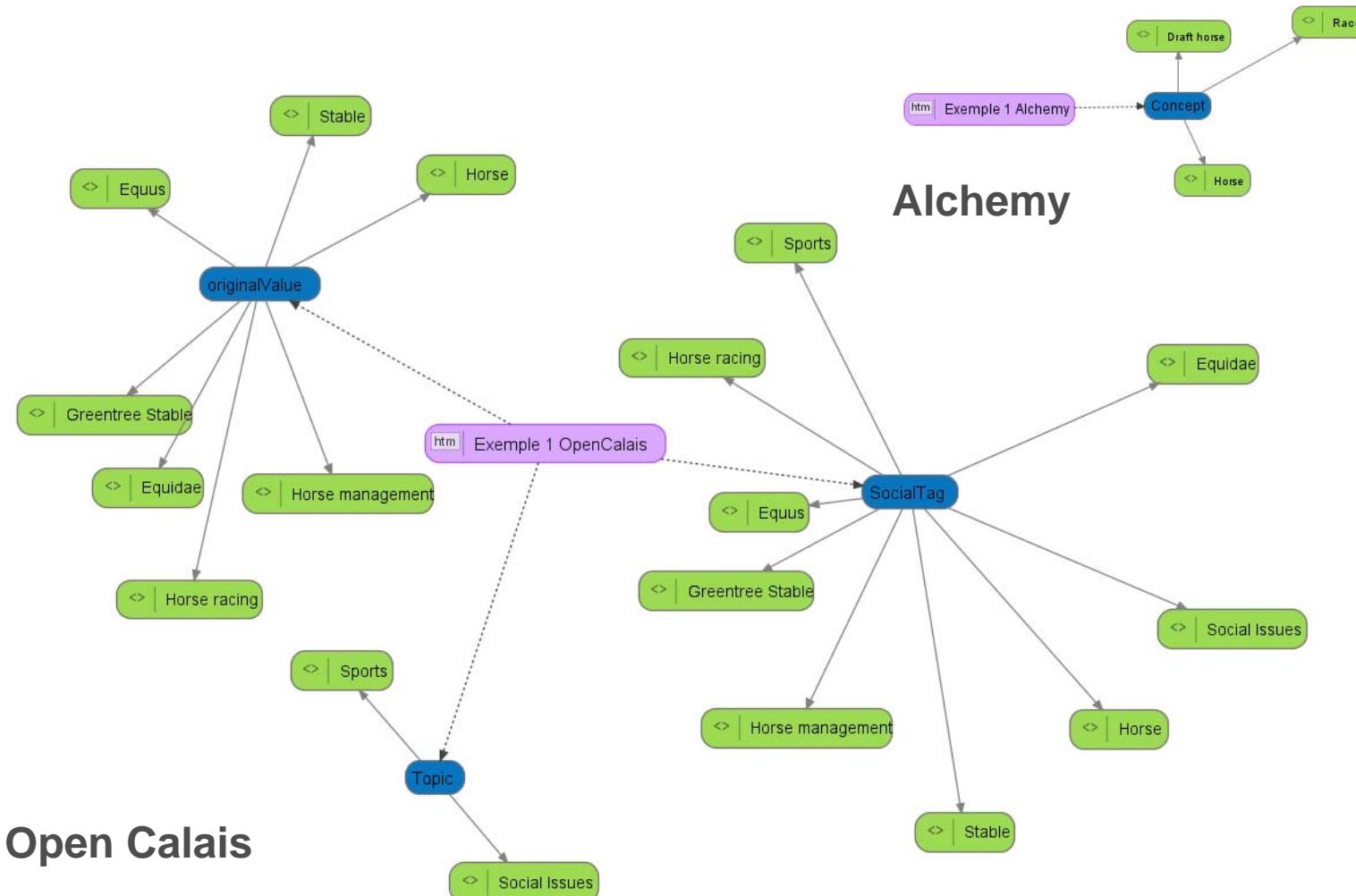
ANIMALS	1
BELONG	3
DRAUGHT	2
FOLLOWING	1
HORSES	4
MARES	1
OUTSIDE	3
OWNERS	3
PONIES	1
PROPERTY	3
RACE	2
RACING	1
REPRODUCTIVE	1
STABLE	7
<b>Total général</b>	<b>33</b>



# Exemple 2 : «the racing stable»



## Extraction des concepts





# Exemple 2 : «the racing stable»

## Wordnet

### Brevet - IPÉE Exemples démonstratifs

ANIMALS	1
BELONG	3
DRAUGHT	2
FOLLOWING	1
HORSES	4
MARES	1
OUTSIDE	3
OWNERS	3
PONIES	1
PROPERTY	3
RACE	2
RACING	1
REPRODUCTIVE	1
STABLE	7
<b>Total général</b>	<b>33</b>

## Horse

### Noun

S: (n) **horse**, [Equus caballus](#) (solid-hoofed herbivorous quadruped domesticated since prehistoric times)

S: (n) **horse**, [gymnastic horse](#) (a padded gymnastic apparatus on legs)

S: (n) [cavalry](#), [horse cavalry](#), **horse** (troops trained to fight on horseback)

S: (n) [sawhorse](#), **horse**, [sawbuck](#), [buck](#) (a framework for holding wood that is being sawed)

S: (n) [knight](#), **horse** (a chessman shaped to resemble the head of a horse; can move two squares horizontally and one vertically (or vice versa))

### Verb

S: (v) **horse** (provide with a horse or horses)

## Racing

### Noun

S: (n) **racing** (the sport of engaging in contests of speed)

### Verb

S: (v) [rush](#), [hotfoot](#), [hasten](#), [hie](#), [speed](#), [race](#), [pelt along](#), [rush along](#), [cannonball along](#), [bucket along](#), [belt along](#), [step on it](#) (move hurriedly)

S: (v) [race](#), [run](#) (compete in a race)

S: (v) [race](#) (to work as fast as possible towards a goal, sometimes in competition with others)

S: (v) [race](#), [rush](#) (cause to move fast or to rush or race)

## Stable

### Noun

S: (n) **stable**, [stalls](#), [horse barn](#) (a farm building for housing horses or other livestock)

### Verb

S: (v) **stable** (shelter in a stable)

### Adjective

S: (adj) **stable** (resistant to change of position or condition)

S: (adj) **stable** (firm and dependable; subject to little fluctuation)

S: (adj) **stable** (not taking part readily in chemical change)

S: (adj) **stable** (maintaining equilibrium)

S: (adj) [static](#), **stable**, [unchanging](#) (showing little if any change)



# Exemple 3 : «piston pump»



The presented installation can work both as a reciprocating piston pump of high efficiency and dedicated to the transport of toxic liquids, as well as a compressor having high compression ratio and dedicated to the compression of the volatile substances containing the toxic particles. Thanks to the special construction, the new system has relatively small dimensions and very high leak tightness, which gives the possibility to use it in the laboratory medical equipment. Thanks to the easy demountable head, the service and cleaning the parts of the system which have direct contact with the toxic substances is simplified. The installation has also an option, which gives the possibility to clean these parts without opening the head.



# Exemple 3 : «piston pump»



## Brevet - IPÉE Exemples démonstratifs

COMPRESSION	2
DEDICATED	2
GIVES	2
HEAD	2
HIGH	3
INSTALLATION	2
PARTS	2
POSSIBILITY	2
SUBSTANCES	2
SYSTEM	2
THANKS	2
TOXIC	3
<b>Total général</b>	<b>55</b>

HIGH	3
TOXIC	3
<b>Total général</b>	<b>6</b>

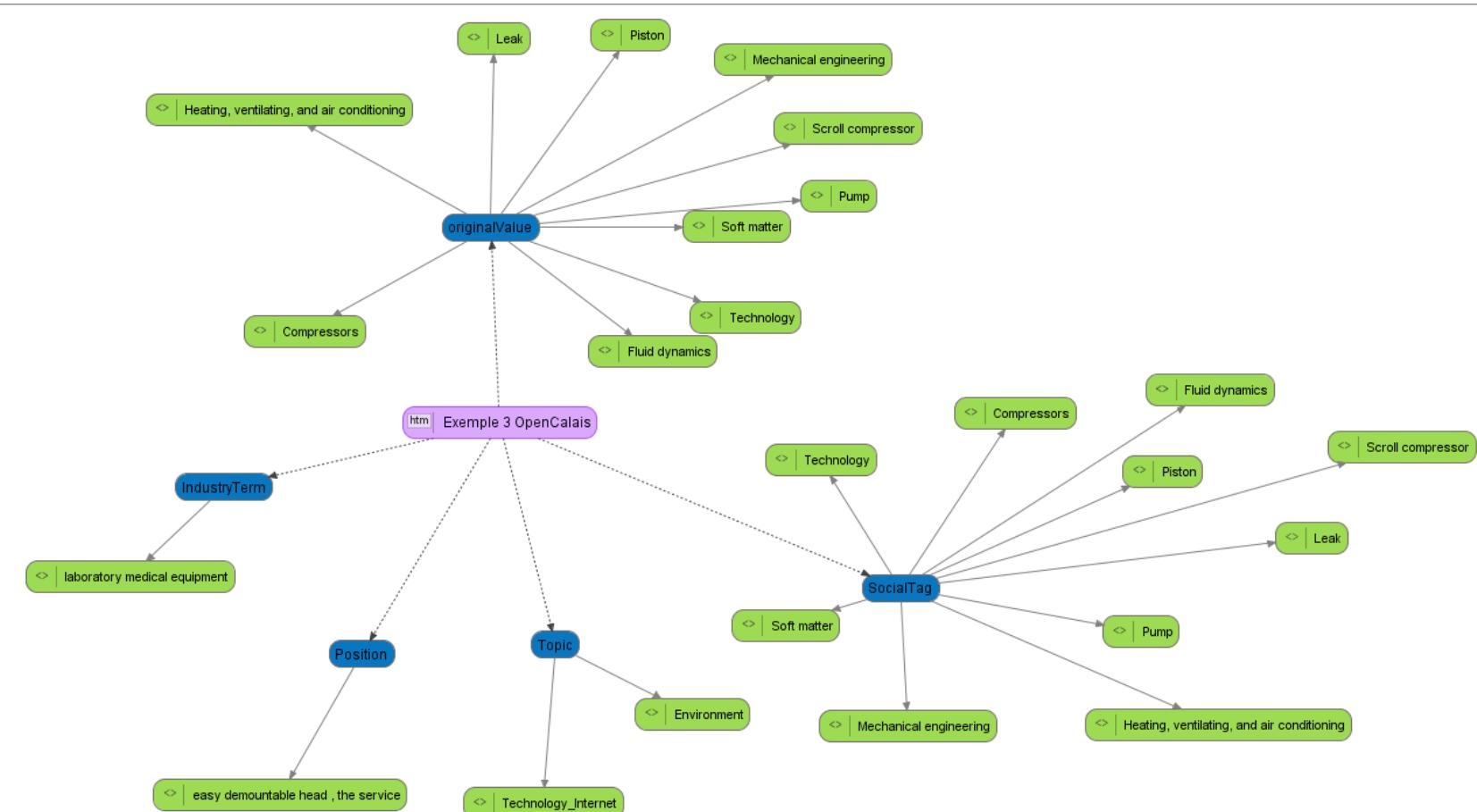
**PISTON ?**  
**PUMP ?**



# Exemple 3 : «piston pump»

## Extraction des concepts

### Brevet - IPÉE Exemples démonstratifs





# Exemple 3 : «piston pump»

## Densité

THE PRESENTED INSTALLATION CAN WORK BOTH AS A RECIPROCATING PISTON PUMP OF HIGH EFFICIENCY AND DEDICATED TO THE TRANSPORT OF TOXIC LIQUIDS AS WELL AS A COMPRESSOR HAVING HIGH COMPRESSION RATIO AND DEDICATED TO THE COMPRESSION OF THE VOLATILE SUBSTANCES CONTAINING THE TOXIC PARTICLES THANKS TO THE SPECIAL CONSTRUCTION THE NEW SYSTEM HAS RELATIVELY SMALL DIMENSIONS AND VERY HIGH LEAK TIGHTNESS WHICH GIVES THE POSSIBILITY TO USE IT IN THE LABORATORY MEDICAL EQUIPMENT THANKS TO THE EASY DEMOUNTABLE HEAD THE SERVICE AND CLEANING THE PARTS OF THE SYSTEM WHICH HAVE DIRECT CONTACT WITH THE TOXIC SUBSTANCES IS SIMPLIFIED THE INSTALLATION HAS ALSO AN OPTION WHICH GIVES THE POSSIBILITY TO CLEAN THESE PARTS WITHOUT OPENING THE HEAD



# Exemple 3 : «piston pump»



## Taxonomie et ontologie

WIPO

Déplacement de liquide avec une pompe

F

**SECTION F — MECHANICAL ENGINEERING; LIGHTING;  
HEATING; WEAPONS; BLASTING**

### ENGINES OR PUMPS

#### Subclass indexes

##### MACHINES

positive displacement

rotary or oscillating piston

liquid and elastic fluid or elastic fluid

F01C

liquid only

F04C

reciprocating piston or other

liquid and elastic fluid or elastic fluid

F01B

liquid only

F04B

non-positive displacement

liquid and elastic fluid or elastic fluid

F01D

liquid only

F03B

##### ENGINES

positive displacement

rotary or oscillating piston

liquid and elastic fluid or elastic fluid

F01C

liquid only

F03C

reciprocating piston or other

liquid and elastic fluid or elastic fluid

F01B

liquid only

F03C

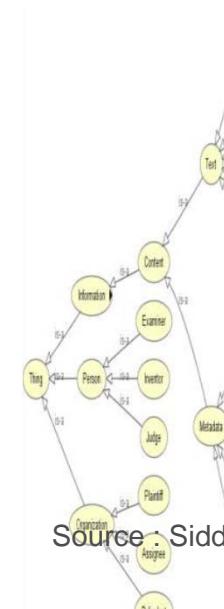
non-positive displacement

liquid and elastic fluid or elastic fluid

F01D

liquid only

F03B

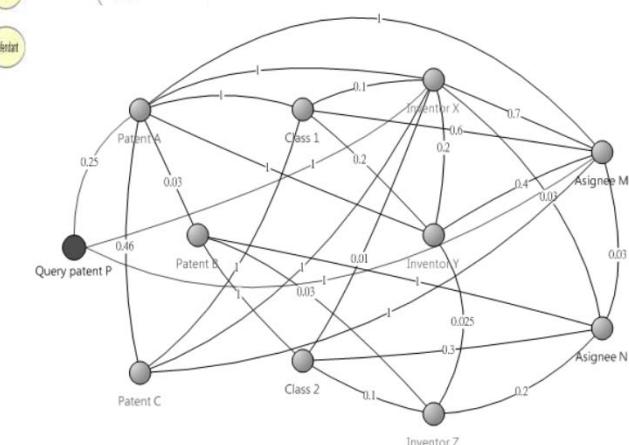


KBM : Protégé

```
PREFIX ont:<http://minoe.stanford.edu:8080/ont#>
SELECT DISTINCT ?patents
WHERE{
?cases a ont:CourtCase.
?cases ont:hasBody ?caseBody.
?caseBody j:0:text ?comment.
FILTER REGEX(?comment, "erythropoietin", "i")
?cases ont:patentsInvolved ?patents.
}
```

Results
#5618698
#5547933
#5955422
#4377513
#5621080
#5756349
#4047496
#4667016
#3623712
#4703008
#5441868
#5641670

Source : Siddharth Taduri, Gloria T. Lau, Kincho H. Law



Source : Meng-Jung Shih, Duen-Ren Liu



# Exemple 4 : «hydrostatic motors»

The main point of the solution of the hydrostatic system for stepless transmission of the rotary movement are the two hydrostatic motors with radial piston connected in push pull configuration. In this configuration the stators of the both hydrostatic motors are the active part of the system, while the both rotors mounted on one and the same driven shaft are the passive part of the system. The system of hydrostatic motors is connected on one side with the engine and on the other side with the load. Due to the invention, both stators connected by planetary system of gear wheels, placed in a special encapsulation are turning with the same rotary speed but in the opposite direction. The main part with the hydrostatic motors contains: Servo system, system for the oil distribution and system for elimination of air or any other volatile substances from the working space of the installation. Referring to the next point of the invention, inside of each hydrostatic motor there are special devices which guarantee the tightness in each position between the upper part of the radial piston and the surface of the stator. Referring to the next point of the invention, the system of oil distribution contains series of valves placed inside of each rotor and all valves are connected to the servo system. Referring to the next point of the invention, the side of each radial piston is separated from the surface of the housing of the piston in such a way that the oil has the free flow between the bottom part of housing and the working space but only on the one side of each radial piston. The contact between the top of each radial piston and the surface of the stator is performed by the rods placed on the spring system in the upper part of each radial piston. Referring to the next point of the invention, the contact between the radial piston and the housing of the piston is done by special sliding plates. Referring to some other point of the invention, the contact between the radial piston and the housing for the piston is done by the linear ball bearings, placed in the bottom of each housing for radial pistons separating plates which slide inside the radial piston. Referring to some other feature of the invention, the oil distribution system contains on both side of each rotor special phase rings connected to the servo system and turning from 0° to 60°. The inside curvature of the each phase ring corresponds to the inside curvature of the stator. The phase rings are connected permanently with the related guiding system of the radial pistons and they are placed in the side covers of each stator. The distance between two neighbouring working spaces is limited to the minimum, what protect the system against so called the turbulent flow of oil. The significant point of the whole construction is that the system does not generate any thermal energy.



# Exemple 4 : «hydrostatic motors»



HYDROSTATIC ?  
MOTOR ?

## Brevet - IPÉE Exemples démonstratifs

CONNECTED	6
CONTACT	3
DISTRIBUTION	3
FROM	3
HOUSING	5
HYDROSTATIC	6
INVENTION	7
MOTORS	4
OIL	5
ONE	3
PART	6
PHASE	3
PISTON	12

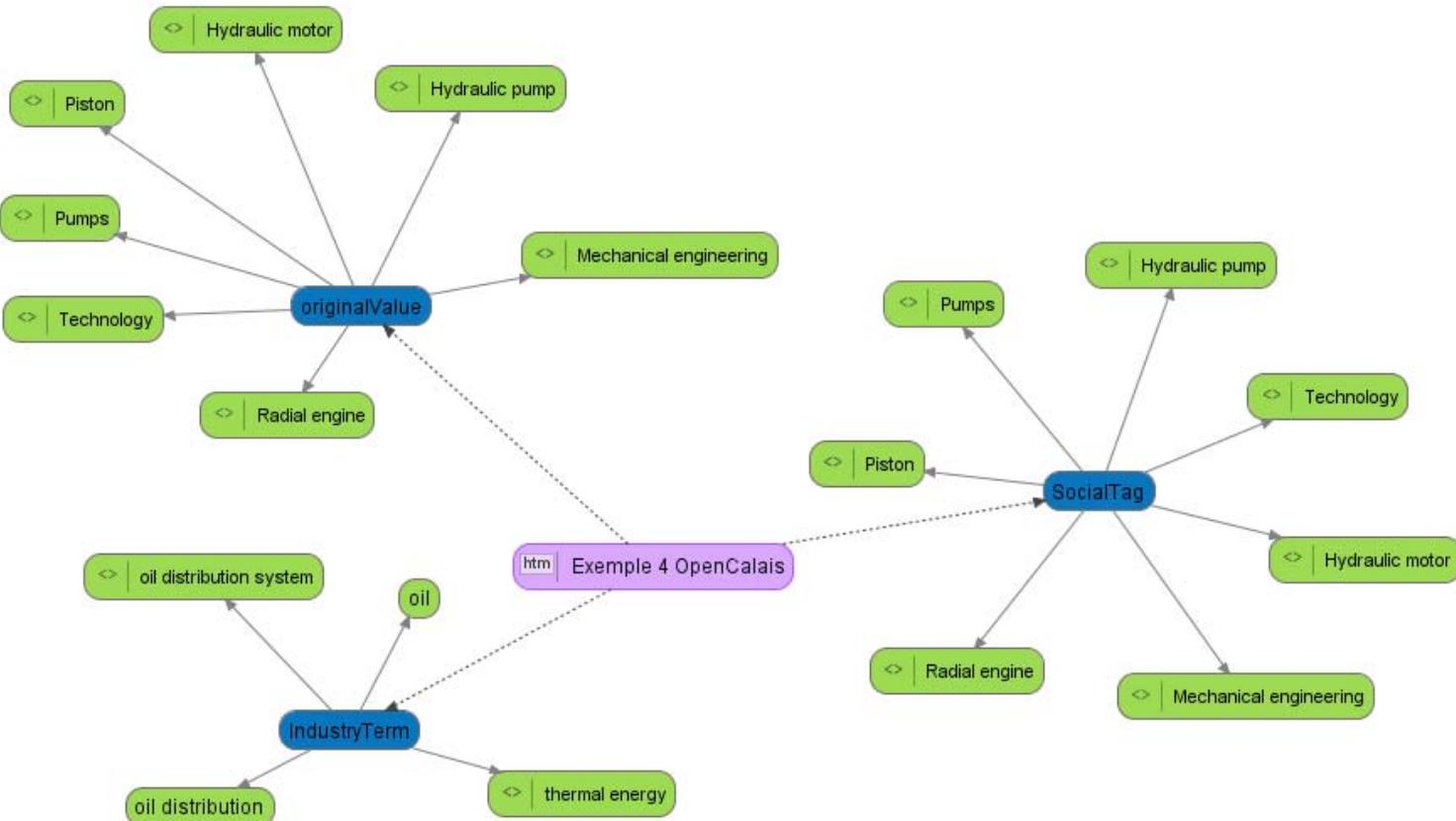
PLACED	5
POINT	7
RADIAL	11
REFERRING	6
SERVO	3
SIDE	6
SPECIAL	4
STATOR	4
SURFACE	3
SYSTEM	16
WORKING	3
<b>Total général</b>	<b>237</b>



# Exemple 4 : «hydrostatic motors»

## Brevet - IPÉE Exemples démonstratifs

### Extraction des concepts





# Exemple 4 : «hydrostatic motors»

## Densité

### Brevet - IPEE Exemples démonstratifs

THE MAIN POINT OF THE SOLUTION OF THE HYDROSTATIC SYSTEM FOR STEPLESS TRANSMISSION OF THE ROTARY MOVEMENT ARE THE TWO HYDROSTATIC MOTORS WITH RADIAL PISTON CONNECTED IN PUSH PULL CONFIGURATION IN THIS CONFIGURATION THE STATORS OF THE BOTH HYDROSTATIC MOTORS ARE THE ACTIVE PART OF THE SYSTEM WHILE THE BOTH ROTORS MOUNTED ON ONE AND THE SAME DRIVEN SHAFT ARE THE PASSIVE PART OF THE SYSTEM THE SYSTEM OF HYDROSTATIC MOTORS IS CONNECTED ON ONE SIDE WITH THE ENGINE AND ON THE OTHER SIDE WITH THE LOAD DUE TO THE INVENTION BOTH STATORS CONNECTED BY PLANETARY SYSTEM OF GEAR WHEELS PLACED IN A SPECIAL ENCAPSULATION ARE TURNING WITH THE SAME ROTARY SPEED BUT IN THE OPPOSITE DIRECTION THE MAIN PART WITH THE HYDROSTATIC MOTORS CONTAINS: SERVO SYSTEM SYSTEM FOR THE OIL DISTRIBUTION AND SYSTEM FOR ELIMINATION OF AIR OR ANY OTHER VOLATILE SUBSTANCES FROM THE WORKING SPACE OF THE INSTALLATION REFERRING TO THE NEXT POINT OF THE INVENTION INSIDE OF EACH HYDROSTATIC MOTOR THERE ARE SPECIAL DEVICES WHICH GUARANTEE THE TIGHTNESS IN EACH POSITION BETWEEN THE UPPER PART OF THE RADIAL PISTON AND THE SURFACE OF THE STATOR REFERRING TO THE NEXT POINT OF THE INVENTION THE SYSTEM OF OIL DISTRIBUTION CONTAINS SERIES OF VALVES PLACED INSIDE OF EACH ROTOR AND ALL VALVES ARE CONNECTED TO THE SERVO SYSTEM REFERRING TO THE NEXT POINT OF THE INVENTION THE SIDE OF EACH RADIAL PISTON IS SEPARATED FROM THE SURFACE OF THE HOUSING OF THE PISTON IN SUCH A WAY THAT THE OIL HAS THE FREE FLOW BETWEEN THE BOTTOM PART OF HOUSING AND THE WORKING SPACE BUT ONLY ON THE ONE SIDE OF EACH RADIAL PISTON THE CONTACT BETWEEN THE TOP OF EACH RADIAL PISTON AND THE SURFACE OF THE STATOR IS PERFORMED BY THE RODS PLACED ON THE SPRING SYSTEM IN THE UPPER PART OF EACH RADIAL PISTON REFERRING TO THE NEXT POINT OF THE INVENTION THE CONTACT BETWEEN THE RADIAL PISTON AND THE HOUSING OF THE PISTON IS DONE BY SPECIAL SLIDING PLATES REFERRING TO SOME OTHER POINT OF THE INVENTION THE CONTACT BETWEEN THE RADIAL PISTON AND THE HOUSING FOR THE PISTON IS DONE BY THE LINEAR BALL BEARINGS PLACED IN THE BOTTOM OF EACH HOUSING FOR RADIAL PISTONS SEPARATING PLATES WHICH SLIDE INSIDE THE RADIAL PISTON REFERRING TO SOME OTHER FEATURE OF THE INVENTION THE OIL DISTRIBUTION SYSTEM CONTAINS ON BOTH SIDE OF EACH ROTOR SPECIAL PHASE RINGS CONNECTED TO THE SERVO SYSTEM AND TURNING FROM 0° TO 60° THE INSIDE CURVATURE OF THE EACH PHASE RING CORRESPONDS TO THE INSIDE CURVATURE OF THE STATOR THE PHASE RINGS ARE CONNECTED PERMANENTLY WITH THE RELATED GUIDING SYSTEM OF THE RADIAL PISTONS AND THEY ARE PLACED IN THE SIDE COVERS OF EACH STATOR THE DISTANCE BETWEEN TWO NEIGHBOURING WORKING SPACES IS LIMITED TO THE MINIMUM WHAT PROTECT THE SYSTEM AGAINST SO CALLED THE TURBULENT FLOW OF OIL THE SIGNIFICANT POINT OF THE WHOLE CONSTRUCTION IS THAT THE SYSTEM DOES NOT GENERATE ANY THERMAL ENERGY



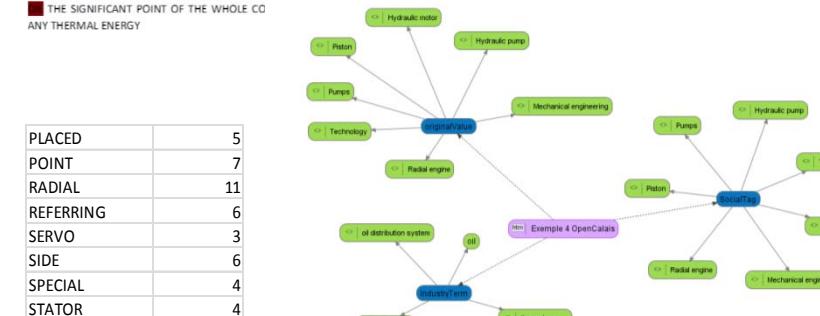
# Exemple 4 : «hydrostatic motors»

## Recherche WIPO

THE MAIN POINT OF THE SOLUTION OF THE HYDROSTATIC FOR STEPLESS TRANSMISSION OF THE ROTARY MOVEMENT ARE THE TWO HYDROSTATIC MOTORS WITH RADIAL PISTON CONNECTED IN PUSH PULL CONFIGURATION IN THIS CONFIGURATION THE STATORS OF THE BOTH HYDROSTATIC MOTORS ARE THE ACTIVE PART OF THE WHILE THE BOTH ROTORS MOUNTED ON ONE AND THE SAME DRIVEN SHAFT ARE THE PASSIVE PART OF THE THE SIDE OF HYDROSTATIC MOTOR IS CONNECTED ON ONE SIDE WITH THE ENGINE AND ON THE OTHER SIDE WITH THE LOAD DUE TO THE INVENTION BOTH STATORS CONNECTED BY PLANETARY GEAR WHEELS PLACED A SPECIAL ENCAPSULATION ARE TURNING WITH THE SAME ROTARY SPEED BUT IN THE OPPOSITE DIRECTION THE MAIN PART WITH THE HYDROSTATIC MOTORS CONTAINS: SERVO FOR THE DISTRIBUTION AND FOR ELIMINATION OF AIR OR ANY OTHER VOLATILE SUBSTANCES FROM THE WORKING SPACE OF THE INSTALLATION REFERRING TO THE NEXT POINT OF THE INVENTION INSIDE EACH HYDROSTATIC MOTOR THERE ARE SPECIAL DEVICES WHICH GUARANTEE THE TIGHTNESS IN EACH POSITION BETWEEN THE UPPER PART OF THE PISTON AND THE SURFACE OF THE STATOR REFERRING TO THE NEXT POINT OF THE INVENTION THE SIDE OF EACH PISTON IS SEPARATED FROM THE SURFACE OF THE HOUSING OF THE PISTON IN SUCH A WAY THAT THE HAS THE FREE FLOW BETWEEN THE BOTTOM PART OF HOUSING AND THE WORKING SPACE BUT ONLY ON THE ONE SIDE OF EACH PISTON THE CONTACT BETWEEN THE TOP OF EACH PISTON AND THE SURFACE OF THE STATOR IS PERFORMED BY THE RODS PLACED ON THE SPRING IN THE UPPER PART OF EACH PISTON REFERRING TO THE NEXT POINT OF THE INVENTION THE CONTACT BETWEEN THE PISTON AND THE HOUSING OF THE PISTON IS DONE BY SPECIAL SLIDING PLATES REFERRED TO SOME OTHER POINT OF THE INVENTION THE CONTACT BETWEEN THE PISTON AND THE HOUSING FOR PISTONS SEPARATING PLATES WHICH SLIDE INSIDE THE PISTON REFERRED TO SOME OTHER FEATURE OF THE INVENTION THE DISTRIBUTION CONTAINS ON BOTH SIDE OF EACH ROTOR SPECIAL PHASE RINGS CONNECTED TO THE SERVO AND TURNING FROM 0° TO 60° THE INSIDE CURVATURE OF THE EACH PHASE RING CORRESPONDS TO THE INSIDE CURVATURE OF THE STATOR THE PHASE RINGS ARE CONNECTED PERMANENTLY WITH THE RELATED GUIDING OF THE PISTONS AND THEY ARE PLACED IN THE SIDE COVERS OF EACH STATOR THE DISTANCE BETWEEN TWO NEIGHBOURING WORKING SPACES IS LIMITED TO THE MINIMUM WHAT PROTECT THE SIGNIFICANT POINT OF THE WHOLE CO ANY THERMAL ENERGY.

PLACED	5
POINT	7
RADIAL	11
REFERRING	6
SERVO	3
SIDE	6
SPECIAL	4
STATOR	4
SURFACE	3
SYSTEM	16
WORKING	3
Total général	237

## Exemples démonstratifs



WIPO							
		Sort by: Relevance					
No	Ctr	Title	PubDate	Int.Class	Appl.No	Applicant	Inventor
1.	EP	2141387 - Step-less hydrostatic gear box for rotary movement	06.01.2010	F16H 39/32	09460018	ZALESKI JACEK	
<p>The hydrostatic system for the step less rotary movement transmission contains two hydrostatic motors with radial pistons (1 and 2) connected in push-pull configuration, the oil distribution system and the system for elimination of air and other volatile substances from the working spaces. The input of the gear box is connected to the engine (M) and the output is connected to the external load (W). In this push-pull configuration of both hydrostatic motors (1 and 2), the stators (1a and 2a) of both hydrostatic motors (1 and 2) are the active part of the gear box, while, the mounted on one and the same driven shaft (3) rotors (1b and 2b) of both hydrostatic motors (1 and 2) are the passive part of the system. In this configuration, the connection (4) containing the planetary gear box (4a) with the transmission ratio 1:1 and the shafts (4b) mounted in housing (4c). It creates the situation that the stators (1a and 2a) of both hydrostatic motors have the same rotary speed but in the opposite direction. The first stator (1a) is connected to the engine (M). The common driven shaft (3 of the rotors (1b and 2b) of the both hydrostatic motors (1 and 2) is connected to the external load (W) on the output of the system. Such a configuration of the both hydrostatic motors (1 and 2) guarantees efficient control of the expected top value of the rotary speed (it protects against over speeding). If this system is implemented in the vehicle, the driver can brake it by using only the energy of the engine (M). The system of the new gear box is completely symmetric and all the functions are placed in one line. This gives the more smoothly transmission of the rotary movement and gives the longer live for all elements of the whole system.</p>							
2.	WO	WO/2000/061971 - CONTROL DEVICES OF A HYDROSTATIC TRANSMISSION	19.10.2000	F04C 11/00	PCT/PT1998 /000018	BAPTISTA, Fernando, Augusto	BAPTISTA, Fernando, Augusto
<p>The invention refers to control devices applied in a hydrostatic transmission, which includes a motor pump (MP), a hydrostatic circuit (HC 1 and HC 2) and an impelling pump (IP), which is formed by a rotor (1), a stator (2) and a body (3); the fluid debit is infinitely variable and is obtained by the radial and variable decentralisation of the said stator (2), by means of the impulsion of the rods (A and B). The devices are constituted by pistons (4 and 5), which impel the rods (A and B), and are inserted in cylinders (6 and 7); by springs systems (9, 10 and 11), which regulate the position of the pistons (4 and 5) of the rods (A and B), and by a command formed by a valve (8), inserted in a vacuum circuit with ways (VI and V2), which communicate with the cylinder (7). Through way (VI) the vacuum effect acts on the piston (5), obtaining the decentralisation of the stator (2) in direction of the rod (A); the fluid pressure transmitted by the extension (HE) to the piston (4), regulates the debit of the impelling pump and the rotation speed of the motor pump, whose rotation direction is the same as the impelling pump, (FIG. 1). Through way (V2) the decentralisation of the stator (2) is obtained in the inverse direction to the rod (A), and the rotation direction of the motor pump is inverse of the rotation direction of the impelling pump, (FIG 2). When the command is not activated, no fluid impulsion is transmitted by the impelling pump and there is no rotation of the motor pump, (FIG. 3).</p>							
3.	WO	WO/2006/108109 - HYDROMECHANICAL CONTINUOUSLY VARIABLE TRANSMISSION	12.10.2006	F16H 47/04	PCT/US2006 /012921	FOLSOM TECHNOLOGIES, INC.	FOLSOM, Lawrence, R.
<p>A hydromechanical continuously variable power transmission (Figs. 1 and 2) for converting rotating mechanical power at one combination of rotational velocity and torque to another combination of rotational velocity and torque over a continuous range, inclu a hydraulic pump (30), operatively driven by an input shaft (50), and a hydraulic motor (35) operatively driving an output shaft (51). The hydraulic pump (30) and hydraulic motor (35) are coupled together mechanically through a pair of planet sets (40, 45), and are coupled together hydraulically through a manifold (52), such that hydraulic fluid pressurized by said pump (30) drives the motor (35) and spent fluid from the motor (35) is cycled back to the pump (30) where it is re-pressurized. Both planet sets (40, 45) are arranged axially with the input shaft (50) and the output shaft (51), and the hydraulic pump (30) and hydraulic motor (35) are arranged in series with each other on opposite sides of the manifold (52), and parallel to the input and output shafts (50, 51), thereby optimizing the use space and keeping the overall length of the transmission to a minimum, and minimizing required lengths of said input and output shafts (50, 51).</p>							
4.	WO	WO/1992/000455 - RADIAL PISTON FLUID MACHINE AND/OR ADJUSTABLE ROTOR	09.01.1992	F04B 1/04	PCT/US1991 /004575	WHITEMOSS, INC.	RILEY, William, C.
<p>An adjustable rotor and a radial piston machine which may utilize an adjustable rotor. The rotor has a primary eccentric (2) rotatable with a shaft (1) and a secondary eccentric (3) adjustable in position relative to the primary eccentric (2). The radial piston machine includes a plurality of piston cartridges (5) arranged radially around the shaft (1) and both high pressure (7) and low pressure (7) fluid distribution systems. Multiple units may be axially coupled. A single unit may handle a variety of fluids in various combinations.</p>							

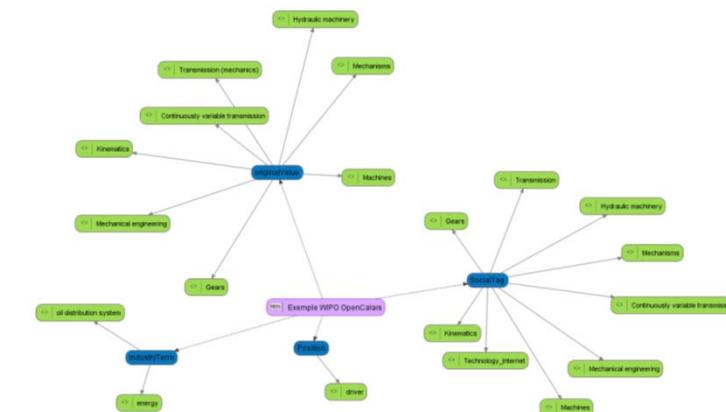


# Exemple 4 : «hydrostatic motors»

## Analyse résultat WIPO

The hydrostatic system for the step less rotary movement transmission contains two hydrostatic motors with radial pistons (1 and 2) connected in push-pull configuration, the oil distribution system and the system for elimination of air and other volatile substances from the working spaces. The input of the gear box is connected to the engine ( M ) and the output is connected to the external load ( W ). In this push-pull configuration of both hydrostatic motors ( 1 and 2 ), the stators ( 1a and 2a ) of both hydrostatic motors ( 1 and 2 ) are the active part of the gear box, while, the mounted on one and the same driven shaft ( 3 ) rotors ( 1b and 2b ) of both hydrostatic motors ( 1 and 2 ) are the passive part of the system. In this configuration, the connection ( 4 ) containing the planetary gear box ( 4a ) with the transmission ratio 1:-1 and the shafts ( 4b ) mounted in housing ( 4c ). It creates the situation that the stators ( 1a and 2a ) of both hydrostatic motors have the same rotary speed but in the opposite direction. The first stator ( 1a ) is connected to the engine ( M ). The common driven shaft ( 3 of the rotors ( 1b and 2b ) of the both hydrostatic motors ( 1 and 2 ) is connected to the external load ( W ) on the output of the system. Such a configuration of the both hydrostatic motors ( 1 and 2 ) guarantees efficient control of the expected top value of the rotary speed ( it protects against over speeding ). If this system is implemented in the vehicle, the driver can brake it by using only the energy of the engine ( M ). The system of the new gear box is completely symmetric and all the functions are placed in one line. This gives the more smoothly transmission of the rotary movement and gives the longer live for all elements of the whole system.

BOX	4
CONFIGURATION	3
CONNECTED	4
ENGINE	3
GEAR	4
HYDROSTATIC	7
MOTORS	6
ROTARY	4
SYSTEM	8
TRANSMISSION	3
<b>Total général</b>	<b>115</b>





# Exemple 4 : «hydrostatic motors»



Synthèse WIPO

Title			
<a href="#">2141387</a> - Step-less hydrostatic gear box for rotary movement			

PubDate	Int.Class	Appl.No	Applicant
06.01.2010	F16H 39/32 <a href="#">?</a>	09460018	ZALESKI JACEK



# QUESTIONS - REPONSES

IN3\_PresentationBrevets\_(2012-11-15)\_JSI\_FR\_01-02d.pdf