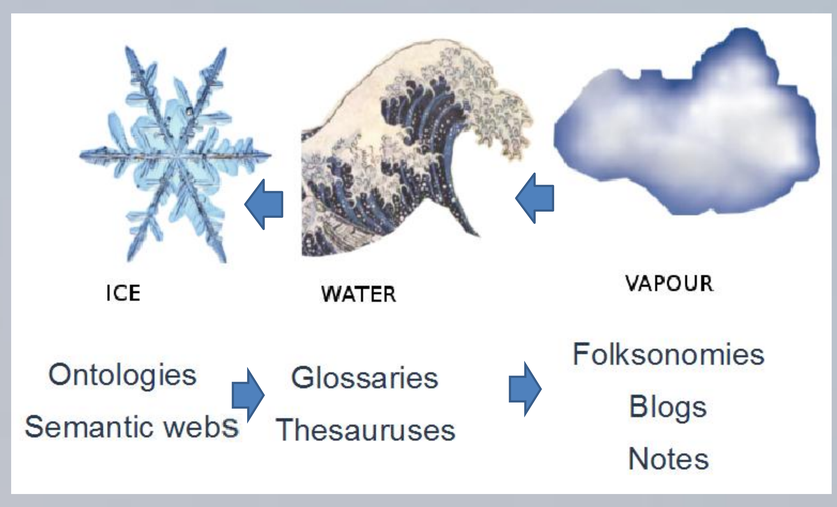
Terminology

UMONS
Université de Mons

Migrating from glossary to ontology

Generating knowledge

The Munich Model :
Water can be found in solid (ice), liquid (water) and gaseous states (vapour); it changes in appearance. Knowledge also comes in different states. It can be said to be solid, when it is easy to grasp and handle, as it is recorded in dictionaries and encyclopaediae. But at times it is also rather gaseous and difficult to grasp. This type of knowledge is the knowledge found in emails, technical notes or other informal snippets of technical communication.



Glossaries

In many fields, concepts are imprecise and fluid. This is particularly true in specialised contexts, where descriptive terminology management is required to help the members of a community working on a given topic identify the concepts they need. In this particular case, the basic tool is a conceptual glossary. Unlike a typical dictionary, its structure is not term-oriented but definition-oriented: it helps scholars to designate concepts, not to define words.

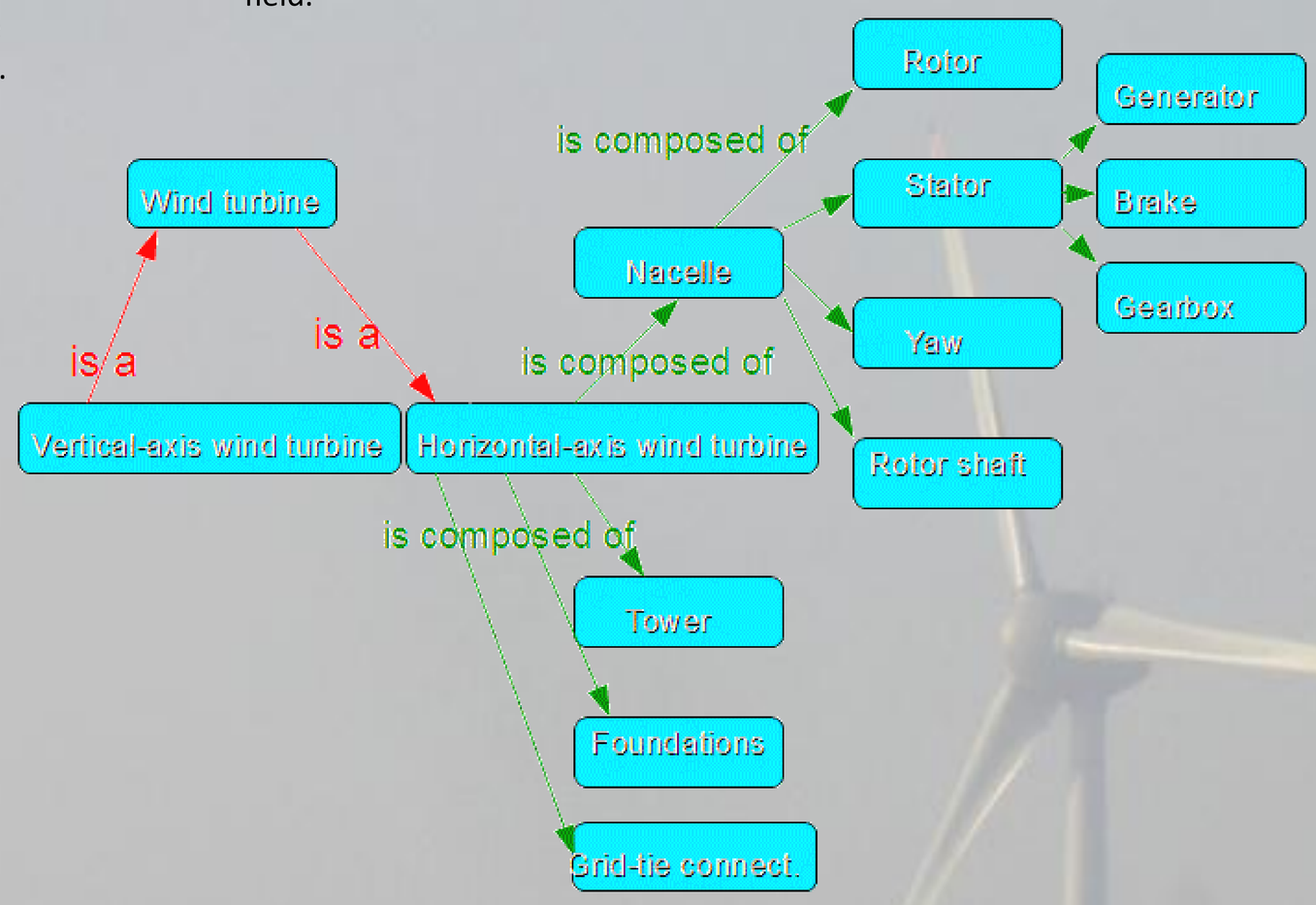
anémomètre	Capteur mesurant la vitesse du vent	energie-online.fr
angle d'azimut	L'angle d'azimut indique le nombre de degrés d'écart entre la surface du module et le point cardinal sud.	www.ibc-solar.fr
dispositif d'orientation	Graphe indiquant la puissance électrique produite en fonction de la vitesse du vent	energie-online.fr
distribution de Weibull	description statistique qui représente la probabilité que le vent souffle à différentes vitesses (allant de 0 à 25 m/s par exemple) sur un site donné. Elle est établie à partir de la vitesse moyenne annuelle de vent sur le site.	www.heliciel.com
effet d'abri	Une éolienne va toujours créer un effet d'abri dans la direction du vent en poupe. En fait, il y aura toujours un sillage derrière l'éolienne	Erelia
effet de sillage	A l'arrière d'une éolienne, un sillage tourbillonnaire se développe. Dans ce sillage,	
éolienne à axe hori		
éolienne à axe verti		
éolienne face au ve		
éolienne sous le ve		
girouette		
loi de Betz		
moyeu		

Gondel	Maschinenträger mit Verkleidung	kuehnast.org
Gondelsteuer-schrank	Elektrische Unterverteilung. Möglichkeit zum Bedienen der Anlage	kuehnast.org
Hindernisbefeuerung/Gefahrenfeuer	Signallicht für die Luftfahrt. Tageslichtbefeuerung weiß	kuehnast.org
Interface	Schnittstelle. Teil eines Bauteils/Systems welches zur Kommunikation mit anderen Bauteilen/sy benötigt wird	
Jumper	Steckkontakt auf Platinen	
Kombinierter Windgeber	Bestehend aus Anemometer und Windfahne	
Kühlkörper	Zusammen mit den Lüftern dienen die Kühlkö zur Ableitung der Abwärme aus den Leistungsschränken	
Leeläufer	Seite des Turmes. Automatische Windnachführung.Leistungsschwankung durc Turmwindschatten.	
Luvläufer	Der Rotor befindet sich dem Wind zugewandt dem Turm. Bei dieser Variante ist eine ständi Windnachführung notwendig	
Maschinenträger	Stählernes Gußteil in der Gondel, an dem der großteil der Komponenten befestigt ist	
Nabe	Auf dem Achszapfen drehbar gelagertes Gus an dem Blattadapter, Generatorrotor, Blattflanschlager und Rotorblätter befestigt sir	
Nennwind-geschwindigkeit	Windgeschwindigkeit, bei der die WEA ihre Nennleistung erreicht. Angabe meistens in m Liegt bei >10m/s	
Pitch	Blattwinkelverstellung. Hydraulisch oder elekt Bestandteile: Regelung, Antrieb, Motor, Lage Getriebe, Hydraulik, Zylinder	
Pulswechselrichter	die Eingangsgleichspannung wird in eine dreiphasige Ausgangsspannung mit regelbare Phase, Frequenz	
Ringgenerator	hochpoliger Sysnchrongenerator	

Flicker	engineering expression for short lived voltage variations in the electrical grid which may cause light bulbs to flicker.	www.heliosbuzz.com
Gearbox	device, located in the nacelle, used to increase the rotational speed of the shaft between the rotor and the generator.	www.heliosbuzz.com
Horizontal axis wind turbine	kind of turbine whose axis of rotation is horizontal. The blades are in a vertical plane.	www.heliosbuzz.com
interconnection	Wind Energy system with the electrical system of the energy utility through which power may flow in either direction.	www.heliosbuzz.com
Nacelle	The streamlined housing of a wind turbine that typically encloses the generator and gearbox.	www.heliosbuzz.com
Net Metering	simplified method of metering the energy consumed and produced by utility customers who have their own renewable energy generator.	www.heliosbuzz.com
Off-grid	telecommunications and monitoring equipment, navigation aids and water pumps.	www.heliosbuzz.com
Off-peak Power	other areas or displace other generation sources such as fossil fuel systems.	www.heliosbuzz.com
Rated Wind Speed	wind speed at which the power produced is a maximum.	www.heliosbuzz.com
Rotor	blades, the energy from the wind and converts it into mechanical energy onto the rotor shaft or hub.	www.heliosbuzz.com
Standard Offer Contract	fixed rates. This agreement allows project developers to plan with less financial risk.	www.heliosbuzz.com
Swept area	blades, which is equal to pi multiplied by the square of the rotor blade length.	www.heliosbuzz.com
Vertical axis wind turbine	The kind of wind turbine with a vertical axis of rotation.	www.heliosbuzz.com
Wake	downstream of the wind turbine rotor (similar to the wake of a ship or large aircraft).	www.heliosbuzz.com
Weak Grids	the grid, in order to carry the fluctuating current from the wind turbine.	www.heliosbuzz.com
Weibull Distribution	used for estimating income from electricity generated, and optimizing the design of the turbines.	www.heliosbuzz.com

Ontologies

Ontologies are explicit specifications of a conceptualisation, which enable the scholar to give meaning to specialised information. In ontologies, concepts are brought together into graphs, where nodes represent semantic relations and generic relations. Ontologies primarily aim at providing a knowledge model in a given field.



Method

Our method consists in :
- ❑tagging terminology
- ❑detecting relations between different concepts
- ❑building taxonomies
- ❑identifying domain specific rules
- ❑sorting terms into structures and hierarchies

Rules in scientific communication :

A *produces/generates* B
A *is a* B / B *is an instance of* A
A *contains* B / B *is part of* A

A *succeeds* B / B *precedes* A
A *occurs at the same time as* B

Applications

- ❑**Writing and/or editing lecture notes**
- ❑**Multilingual glossaries**
- ❑**Databases for computer-aided translation**
- ❑**Speech recognition and synthesis**

3.2.4 POWER CONTROL

Wind turbines require active or passive regulation as power is derived from the free air stream which is, of course, not controllable. Active control includes varying the pitch of the whole blades or blade tips. Passive control results from blade profiles that produce aerodynamic stall at high wind speeds without a change of blade pitch.
Regulation, achieved by controlling the power extracted by the rotor, is necessary since there is little opportunity to store excess energy within the turbine (although there is very short term storage in large machines due to the inertia of the rotor and drive train, and small variations in rotor speed).
The philosophy of turbine control is based on three operational requirements: …

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