

## ***"Overcoming language barriers on the Internet"***

### **Best practice guidelines for building and maintaining multilingual Web sites and services**

**Report from ENBI-WP-11:  
Strategies & Techniques to realize Multilingual Access to European Biodiversity Sites  
through a user-friendly interface on the World Wide Web**



## **Annex to the Final Technical Report WP-11**

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This report is delivered as ANNEX to the Final report of WP 11 and deals with the completion of some missing issues in WP-11 which needed some special attention towards the end of the ENBI project and could not be incorporated into the major final report of WP-11.

### Summary:

This report has dealt with the following tasks:

Task No.	Task
1	Completion of thoroughly testing online MT-Translation of FishBase content using EU-translation service.
2	Picking up loose ends with the Commission translation service (how can others get access; how can others participate in further developing specialized dictionaries).
3	Develop a prototype for the "Volunteer translation service by email"

The following deliverables were provided:

Task	Deliverables
1	Notes on how source text of FishBase-like systems can be prepared for best MT results under consideration of the present features of external EU-translation service.
2	Agreement with the EU-Translation department on other systems which may use their MT-Service. Report how other systems can connect to the system and can contribute specialized dictionaries; list of most missing topics in the dictionary library of the EU-MT service under consideration of the topic biodiversity.
3	Detailed technical instructions how others systems can set up a "Volunteer translation service by email" and programmers script.

### Task 1: Completion of thoroughly testing online MT-Translation of FishBase content using EU-translation service.

**Deliverable:** Notes on how source text of FishBase-like systems can be prepared for best MT results under consideration of the present features of external EU-translation service.

**Background:** The connection to the EU-Translation Service for Website "on the fly" translation for biodiversity information encountered a serious delay. At the date of commencement of ENBI, this service was not yet established and it took more than two years from there to further technical developments to establish this service (major reasons of the delay were a major re-structuring of the DGT and in addition, security reasons on the MT server software) for external use. The trial system for MT (FishBase) was finally connected via PHP script and works well, however testing and improvement of the "real-time" translation of FishBase content could not be completed in due time and thus were not included in the main final report of WP-11.

### Testing and verification of source text

In order to verify the results and the quality of the EU-Systran translation engine under implementation of the special dictionaries as compiled for FishBase and the domain established for the ENBI-project in the MT system of the EU, many pieces of free text from the species summaries in FishBase were translated and the results investigated. The testing process included source text modification and the identification of missing terms (not translated) and erroneous translations in the environment of FishBase content.

### Translation Quality improved by source text modification and completion of dictionaries with missing terms.

The following table (Tab. 1) depicts an example for the resource "Species Summary" in the database FishBase. The field "Biology" of the species *Mola mola* was used as an example in this report to demonstrate, how source text modifications can improve machine translation quality.

<u><a href="#">Mola mola</a> (Linnaeus, 1758)</u>	
<b>Family:</b>	Molidae (Molas or Ocean Sunfishes)
<b>Order:</b>	Tetraodontiformes (puffers and filefishes)
<b>Class:</b>	Actinopterygii (ray-finned fishes)
<b>FishBase name:</b>	Ocean sunfish
<b>Max. size:</b>	333 cm TL (male/unsexed; Ref. 26340); max. published weight: 2,300.0 kg (Ref. 43760)
<b>Environment:</b>	pelagic; oceanodromous (Ref. 51243); marine; depth range 0 – 480 m
<b>Climate:</b>	subtropical; 12 – 25°C; 65°N - 43°S, 180°W - 180°E
<b>Importance:</b>	fisheries: minor commercial
<b>Resilience:</b>	Low, minimum population doubling time 4.5 - 14 years (Assuming tmax > 10)
<b>Distribution:</b>	Warm and temperate zones of all oceans. Eastern Pacific: British Columbia, Canada (Ref. 2850) to Peru and Chile (Ref. 5530). Eastern Atlantic: Scandinavia to South Africa (occasionally western Baltic, Mediterranean). Western Atlantic: Newfoundland, Canada (Ref. 7251) to Argentina (Ref. 36453).
<b>Morphology:</b>	<u>Dorsal spines</u> (total): 0 - 0; <u>Dorsal soft rays</u> (total): 15 – 18; <u>Anal spines</u> : 0; <u>Anal soft rays</u> : 14 – 17. The scaleless body is covered with extremely thick, elastic skin. The caudal fin is replaced by a rudder-like structure called 'clavus'. Dorsal and anal fins very high with short base; in swimming, these fins are flapped synchronously from side to side and can propel the fish at surprisingly good speed. Pectorals small and rounded, directed upward (Ref. 6885). Mouth very small; teeth fused to form a parrot-like beak. Gills 4, a slit behind the last; gill openings reduced to a small hole at the base of the pectoral fins. Gas bladder absent in adults.
<b>Biology:</b>	Often drifts at the surface while lying on its side, or swims upright and close to the surface that its dorsal fin projects above the water. Has been filmed in 480 m depth at a baited camera (Lis Maclaren, pers. comm. 2005). Feeds on fishes, mollusks, zooplankton, jellyfish, crustaceans, and brittle stars (Ref. 4925). A live colony of the cirriped <i>Lepas anatifera</i> were found attached to the anterior portion of the sunfish's esophagus that was stranded in the south coast of Terceira Island, Azores Archipelago in 2004; an association with apparent advantages for the goose barnacles such as a

picture (Momol\_ue.jpg) by [First, D.](#)



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regular intake of food and protection both from hydrodynamic hazards and from predators, but for the sunfish, it is not clear whether it is neutral or causes feeding problems since the attachment may obstruct the sunfish's esophagus (Ref. 55063). Recorded as the heaviest bony fish and as the one with the most eggs in the Guinness Book of World Records (Ref. 6472). Generally not eaten, but considered by some as a delicacy (Ref. 30573). Utilized fresh and can be broiled (Ref. 9988). Used in Chinese medicine (Ref. 12166). Molas may contain the same toxin as puffers and porcupine fish (Ref. 13513). Does not adapt well in captivity (Ref. 12382, 37040). Juveniles are preyed upon by California sea lions in Monterey Bay (Ref. 37040).
<b>Red List Status:</b>
<b>Dangerous:</b>
<b>Coordinator:</b>
<b>Main Ref:</b>
Formularbeginn
1732
Species
Formularende

Formularende

[Update](#) | [Add](#) | [Get XML file](#) | [Point data in XML](#) | [Common names in XML](#) | [Photos in XML](#)

Tab. 1: The original "Species Summary" in FishBase, a typical resource in this database which needs a combination of manual (label) and machine translation (free text). Translated Label are not shown below.

### Species summary, field "Biology", two translations runs.

The first round by MT-translation from English to selected languages as shown below was based on the source text "as is" at present in the species summary, "Biology" field of *Mola mola* (example shown here for German, Spanish and Dutch). The second translation round was applied to a modified text of the "Biology" Field". Modifications were: punctuation, shorter but complete sentences (to avoid telegraphic style), more simple vocabulary, no ambiguous words (e.g. instead of "dorsal fin **projects** above the water" it was replaced by "and **beats** the dorsal fin"...). The modifications were rather modest, and did not consume much time, but improved the translation quality tremendously.

FishBase "Biology" Current text for Mola Mola	Translation into German
Often drifts at the surface while lying on its side, or swims upright and close to the surface that its dorsal fin projects above the water. Has been filmed in 480 m depth at a baited camera (Lis Maclaren, pers. comm. 2005). Feeds on fishes, mollusks, zooplankton, jellyfish, crustaceans, and brittle stars (Ref. 4925). A live colony of the cirriped <i>Lepas anatifera</i> were found attached to the anterior portion of the sunfish's esophagus that was stranded in the south coast of Terceira Island, Azores Archipelago in 2004; an association with apparent advantages for the goose barnacles such as a regular intake of food and protection both from hydrodynamic hazards and from	Häufig schwimmen aufrecht Antriebe an der Oberfläche während sie auf ihrer Seite liegen, oder und nahe der Oberfläche, die ihre dorsalen Flosseprojekte über dem Wasser. Ist gewesen filmed in 480 der m-Tiefe an einer angelockten Kamera (Lis Maclaren, Pers. comm. 2005). Frißt Fische, Mollusken, Zooplankton, Quallen, Krebstiere und brüchige Sterne (Ref. 4925). Eine lebende Kolonie von cirriped <i>Lepas-anatifera</i> Gefunden befestigt am vorhergehenden Teil der Speiseröhre Sunfish's, die in der Südküste der Insel Terceira, Azoren-Archipel Im Jahre 2004 angeschwemmt wurde; eine Vereinigung mit ersichtlichen Vorteilen für Gansbarnacles wie zum Beispiel eine regelmäßige Aufnahme von Nahrung und

<p>predators, but for the sunfish, it is not clear whether it is neutral or causes feeding problems since the attachment may obstruct the sunfish's esophagus (Ref. 55063). Recorded as the heaviest bony fish and as the one with the most eggs in the Guinness Book of World Records (Ref. 6472). Generally not eaten, but considered by some as a delicacy (Ref. 30573). Utilized fresh and can be broiled (Ref. 9988). Used in Chinese medicine (Ref. 12166). Molas may contain the same toxin as puffers and porcupine fish (Ref. 13513). Does not adapt well in captivity (Ref. 12382, 37040). Juveniles are preyed upon by California sea lions in Monterey Bay</p>	<p>Schutz sowohl vor hydrodynamischen Gefahren als auch vor Räufern, aber für Sunfish ist es nicht klar, ob es neutral ist oder verursacht Fütterungsprobleme, da die Verbindung die Speiseröhre Sunfish's behindern kann (Ref., 55063). die als die schwersten knöchigen Fische und als dasjenige mit den den meisten Eiern im Guinness Buch von Weltrekorden registriert wird, (nicht allgemein gegessene sondern Ref., 6472)., von einigen als eine Zartheit angesehen wird, (Ref. 30573). benutzte frisch und gebraten werden kann (Ref., 9988). die in chinesischer Medizin verwendet wird, (Ref. 12166). Molas den gleichen Giftstoff enthalten kann wie Puffers und Stachelschweinfische (Ref. sich in Gefangenschaft anzupassen nicht gut (Ref. 12382, 37040). sind Jugendliche preyed über von Kalifornien-Meereslöwen In der Bucht von Monterey (Ref. 37040).</p>
<p><b>FishBase "Biology" Current text for Mola Mola</b></p>	<p><b>Translation into Spanish</b></p>
<p>Often drifts at the surface while lying on its side, or swims upright and close to the surface that its dorsal fin projects above the water. Has been filmed in 480 m depth at a baited camera (Lis Maclaren, pers. comm. 2005). Feeds on fishes, mollusks, zooplankton, jellyfish, crustaceans, and brittle stars (Ref. 4925). A live colony of the cirriped <i>Lepas anatifera</i> were found attached to the anterior portion of the sunfish's esophagus that was stranded in the south coast of Terceira Island, Azores Archipelago in 2004; an association with apparent advantages for the goose barnacles such as a regular intake of food and protection both from hydrodynamic hazards and from predators, but for the sunfish, it is not clear whether it is neutral or causes feeding problems since the attachment may obstruct the sunfish's esophagus (Ref. 55063). Recorded as the heaviest bony fish and as the one with the most eggs in the Guinness Book of World Records (Ref. 6472). Generally not eaten, but considered by some as a delicacy (Ref. 30573). Utilized fresh and can be broiled (Ref. 9988). Used in Chinese medicine (Ref. 12166). Molas may contain the same toxin as puffers and porcupine fish (Ref. 13513). Does not adapt well in captivity (Ref. 12382, 37040).</p>	<p>A menudo las desviaciones en la superficie mintiendo al mismo tiempo en su lado, o nadan verticalmente y cerca de la superficie que sus proyectos dorsales de aleta sobre el agua. Ha sido filmed con la profundidad de 480 m en una cámara hostigada (Lis Maclaren, pers. comm. 2005). Se alimenta de peces, moluscos, del zooplancton, de medusas, crustáceos, y estrellas frágiles (ref. 4925). Una colonia viva de cirriped el anatifera <i>Lepas</i> se encontró atado a la porción anterior del esófago de los sunfish que cordón en la costa de sur Terceira de la isla de, archipiélago de Azores en 2004; una asociación con ventajas aparentes para las lapas de ganso tales como una toma regular de la comida y de la protección tanto contra peligros hidrodinámicos como contra predadores, sino para el sunfish, e'l no deja clara si es neutro o causa problemas de alimentación puesto que la fijación puede obstruir el esófago de los sunfish (ref. 55063). registrado como los peces huesudos más pesados y como el que esta' con la mayor parte de los huevos en el Libro Guinness de registros mundiales (ref. 6472). generalmente no comido, sino considerado por alguno como delicadeza (el ref. 30573). utilizó fresco y puede asarse (ref. 9988).</p>

<p>Juveniles are preyed upon by California sea lions in Monterey Bay</p>	<p>utilizado en medicina china (el ref. 12166). Molas puede contener la misma toxina que fumadores y peces de puerco espín (ref. para no adaptarse bien en el cautiverio (ref. 12382, jóvenes 37040). son preyed sobre por leones marinos de California en la bahía de Monterey</p>
<p><b>FishBase "Biology" Current text for Mola Mola</b></p>	<p><b>Translation into Dutch</b></p>
<p>Often drifts at the surface while lying on its side, or swims upright and close to the surface that its dorsal fin projects above the water. Has been filmed in 480 m depth at a baited camera (Lis Maclaren, pers. comm. 2005). Feeds on fishes, mollusks, zooplankton, jellyfish, crustaceans, and brittle stars (Ref. 4925). A live colony of the cirriped <i>Lepas anatifera</i> were found attached to the anterior portion of the sunfish's esophagus that was stranded in the south coast of Terceira Island, Azores Archipelago in 2004; an association with apparent advantages for the goose barnacles such as a regular intake of food and protection both from hydrodynamic hazards and from predators, but for the sunfish, it is not clear whether it is neutral or causes feeding problems since the attachment may obstruct the sunfish's esophagus (Ref. 55063). Recorded as the heaviest bony fish and as the one with the most eggs in the Guinness Book of World Records (Ref. 6472). Generally not eaten, but considered by some as a delicacy (Ref. 30573). Utilized fresh and can be broiled (Ref. 9988). Used in Chinese medicine (Ref. 12166). Molas may contain the same toxin as puffers and porcupine fish (Ref. 13513). Does not adapt well in captivity (Ref. 12382, 37040). Juveniles are preyed upon by California sea lions in Monterey Bay</p>	<p>Vaak zweemt de afwijkingen aan de oppervlakte terwijl het liggen aan zijn kant, of rechtop en dicht bij de oppervlakte die zijn dorsale vinprojecten boven het water. Filmed in 480 mdiepte bij een gelokte camera is geweest (Lis Maclaren, pers. comm. 2005). Voedt zich met vissen, weekdieren, dierlijk plankton, kwallen, schaaldieren, en brosse sterren (Ref. 4925). Een levende kolonie van cirriped <i>anatifera</i> <i>Lepas</i> werd gevonden aan het voorafgaande gedeelte van de slokdarm van sunfish in bijlage die in de zuidenkust van Terceira Eiland, de Archipel van de Azoren in 2004 was vastgelopen; een vereniging met duidelijke voordelen voor de ganseendenmosselen zoals een regelmatige opname van voedsel en bescherming zowel tegen hydrodynamische gevaren als tegen predatoren, maar voor sunfish, het is niet duidelijk of het neutraal is of het voeden problemen veroorzaakt aangezien de gehechtheid de slokdarm van sunfish kan belemmeren (Ref. 55063). die als zwaarste knobkige vissen en als met de meeste eieren in het Guinness Book van Wereldrecords wordt geregistreerd (Ref. 6472). over het algemeen gegeten niet, maar die door sommigen als delicatessen wordt beschouwd (Ref. 30573). gebruikte vers en kan worden geroosterd (Ref. 9988). die in Chinese geneeskunde wordt gebruikt (Ref. 12166). Molas kan de zelfde toxine bevatten zoals kogelvissen en stekelvarkenvissen (Ref. om goed in gevangenschap aan te passen niet (Ref. 12382, Jongeren 37040). zijn preyed op door de zeeleeuwen van Californië in de Baai van Monterey</p>

## Translation run with modified source text

<b>FishBase "Biology" Modified Source Text (2)</b>	<b>Translation to German (2)</b>
<p>The fish often drifts at the surface of the ocean while lying on his side. It often swims upright and close to the surface and beats the dorsal fin above the water. The fish was recorded with a camera equipped with a bait in a depth of 480 m. (Lis Maclaren, pers. comm. 2005). The fish feeds on fishes, mollusks, zooplankton, jellyfish, crustaceans and brittle stars. (Ref. 4925). A colony of live cirriped Lepas anatifera was found and was attached to the anterior portion of the esophagus of the sunfish. This specimen was stranded in 2004 at the south coast of Terceira Island, Azores Archipelago. This association may have advantages for the goose barnacles such as a regular intake of food and protection both from hydrodynamic hazards and from predators. For the sunfish it is not clear whether it is a problem or if it can cause feeding problems. The barnacles may obstruct the esophagus of the sunfish. (Ref. 55063). This fish was recorded in the Guinness Book of World Records as the heaviest bony fish and as the fish with the most eggs. (Ref. 6472). In general, this fish is not used as food fish, but some people consider the fish as a delicacy. (Ref. 30573). The fish can be eaten fresh and broiled. (Ref. 9988). The fish is used in the Chinese medicine. (Ref. 12166). The Mola species may contain the same toxin as the pufferfish and the porcupine fish (Ref. 13513). The fish does not adapt to the conditions in captivity (Ref. 12382, 37040). The juveniles are eaten by California sea lions in Monterey Bay.</p>	<p>Der Fisch treibt häufig an der Oberfläche des Ozeans während er auf seiner Seite liegt. Er schwimmt häufig aufrecht und nahe der Oberfläche und schlägt die dorsale Flosse über dem Wasser. Der Fisch wurde mit einer Kamera registriert, die mit einem Köder in einer Tiefe von 480 m. ausgerüstet war, (Lis Maclaren, Pers. comm. 2005). Der Fisch frisst Fische, Mollusken, Zooplankton, Quallen, Krebstiere und brüchige Sterne. (Ref. 4925). Eine Kolonie von lebend cirriped Lepas-anatifera Gefunden und festhielt am vorhergehenden Teil der Speiseröhre von Sunfish. Dieses Exemplar wurde im Jahre 2004 an der Südküste der Insel Terceira angeschwemmt, Azoren-Archipel. Diese Vereinigung kann Vorteile für Gansbarnacles wie zum Beispiel eine regelmäßige Aufnahme von Nahrung und Schutz sowohl vor hydrodynamischen Gefahren als auch vor Räubern haben. Für Sunfish ist es nicht klar, ob es ein Problem ist, oder, wenn es Fütterungsprobleme verursachen kann. Barnacles können die Speiseröhre von Sunfish behindern. (Ref. 55063). Dieser Fisch wurde im Guinness Buch von Weltrekorden als die schwersten knöchigen Fische und als die Fische mit den meisten Eiern registriert. (Ref. 6472). Im allgemeinen wird dieser Fisch nicht als Lebensmittelfische verwendet, aber einige Personen betrachten die Fische als eine Zartheit. (Ref. 30573). Die Fische können gegessenes frisch sein und gebraten. (Ref. 9988). Der Fisch wird in der chinesischen Medizin verwendet. (Ref. 12166). Die mola-Arten können den gleichen Giftstoff enthalten wie Pufferfish und die Stachelschweinfische (Ref. 13513). Der Fisch paßt sich nicht an die Bedingungen in der Gefangenschaft an (Ref. 12382, 37040). Die Jugendlichen werden von Kalifornien-Meeresslöwen In der Bucht von Monterey gegessen.</p>
<b>FishBase "Biology" Modified Source Text (1)</b>	<b>Translation to Spanish (1)</b>
<p>The fish often drifts at the surface of the ocean while lying on his side. It often swims upright and close to the surface and beats the dorsal fin above the water. The fish</p>	<p>El pez deriva a menudo en la superficie del océano dándose al mismo tiempo en su lado. Nada a menudo verticalmente y cerca de la superficie y vence a la aleta dorsal</p>

<p>was recorded with a camera equipped with a bait in a depth of 480 m. (Lis Maclaren, pers. comm. 2005). The fish feeds on fishes, mollusks, zooplankton, jellyfish, crustaceans and brittle stars. (Ref. 4925). A colony of live cirriped <i>Lepas anatifera</i> was found and was attached to the anterior portion of the esophagus of the sunfish. This specimen was stranded in 2004 at the south coast of Terceira Island, Azores Archipelago. This association may have advantages for the goose barnacles such as a regular intake of food and protection both from hydrodynamic hazards and from predators. For the sunfish it is not clear whether it is a problem or if it can cause feeding problems. The barnacles may obstruct the esophagus of the sunfish. (Ref. 55063). This fish was recorded in the Guinness Book of World Records as the heaviest bony fish and as the fish with the most eggs. (Ref. 6472). In general, this fish is not used as food fish, but some people consider the fish as a delicacy. (Ref. 30573). The fish can be eaten fresh and broiled. (Ref. 9988). The fish is used in the Chinese medicine. (Ref. 12166). The <i>Mola</i> species may contain the same toxin as the pufferfish and the porcupine fish (Ref. 13513). The fish does not adapt to the conditions in captivity (Ref. 12382, 37040). The juveniles are eaten by California sea lions in Monterey Bay.</p>	<p>sobre el agua. El pez se registró con una cámara equipada con una carnada con una profundidad de 480 m. (Lis Maclaren, pers. comm. 2005). El pez se alimenta de peces, moluscos, del zooplancton, de medusas, crustáceos y estrellas frágiles. (Ref. 4925). Una colonia de viva cirriped el anatifera <i>Lepas</i> se encontró y se ató a la porción anterior del esófago del sunfish. Este espécimen cordón en 2004 en la costa de sur Terceira de la isla de, archipiélago de Azores. Esta asociación puede tener ventajas para las lapas de ganso tales como una toma regular de la comida y de la protección tanto contra peligros hidrodinámicos como contra predadores. Para el sunfish no está claro si sea un problema o si puede causar problemas de alimentación. Las lapas pueden obstruir el esófago del sunfish. (Ref. 55063). Este pez se registró en el Libro Guinness de registros mundiales como los peces huesudos más pesados y como los peces con la mayor parte de los huevos. (Ref. 6472). Generalmente este pez no se utiliza como peces de comida, sino que algunas gente considera a los peces como delicadeza. (Ref. 30573). Los peces pueden ser frescos comidos y asado. (Ref. 9988). El pez se utiliza en la medicina china. (Ref. 12166). Las especies <i>Mola</i> pueden contener la misma toxina que el pufferfish y los peces de puerco espín (ref. 13513). El pez no se adapta a las condiciones en el cautiverio (ref. 12382, 37040). Los jóvenes son comidos por leones marinos de California en la bahía de Monterey.</p>
<p><b>FishBase "Biology" Modified Source Text (1)</b></p>	<p><b>Translation to Dutch(1)</b></p>
<p>The fish often drifts at the surface of the ocean while lying on his side. It often swims upright and close to the surface and beats the dorsal fin above the water. The fish was recorded with a camera equipped with a bait in a depth of 480 m. (Lis Maclaren, pers. comm. 2005). The fish feeds on fishes, mollusks, zooplankton, jellyfish, crustaceans and brittle stars. (Ref. 4925). A colony of live cirriped <i>Lepas anatifera</i> was found and was attached to the anterior portion of the</p>	<p>De vis drijft vaak aan de oppervlakte van de oceaan af terwijl het liggen aan zijn kant. Het zwemt vaak rechtop en dicht bij de oppervlakte en slaat de dorsale vin boven het water. De vis werd met een camera geregistreerd die met een aas in een diepte van 480 m. wordt uitgerust (Lis Maclaren, pers. comm. 2005). De vis voedt zich met vissen, weekdieren, dierlijk plankton, kwallen, schaaldieren en brosse sterren. (Ref. 4925). Een kolonie van levend cirriped anatifera</p>

<p>esophagus of the sunfish. This specimen was stranded in 2004 at the south coast of Terceira Island, Azores Archipelago. This association may have advantages for the goose barnacles such as a regular intake of food and protection both from hydrodynamic hazards and from predators. For the sunfish it is not clear whether it is a problem or if it can cause feeding problems. The barnacles may obstruct the esophagus of the sunfish. (Ref. 55063). This fish was recorded in the Guinness Book of World Records as the heaviest bony fish and as the fish with the most eggs. (Ref. 6472). In general, this fish is not used as food fish, but some people consider the fish as a delicacy. (Ref. 30573). The fish can be eaten fresh and broiled. (Ref. 9988). The fish is used in the Chinese medicine. (Ref. 12166). The Mola species may contain the same toxin as the pufferfish and the porcupine fish (Ref. 13513). The fish does not adapt to the conditions in captivity (Ref. 12382, 37040). The juveniles are eaten by California sea lions in Monterey Bay.</p>	<p>Lepas werd gevonden en werd vastgemaakt aan het voorafgaande gedeelte van de slokdarm van sunfish. Dit specimen was vastgelopen in 2004 bij de zuidkust van Terceira Eiland, de Archipel van de Azoren. Deze vereniging kan voordelen voor de ganseendenmosselen zoals een regelmatige opname van voedsel en bescherming zowel tegen hydrodynamische gevaren als tegen predatoren hebben. Voor sunfish is het niet duidelijk of het een probleem is of als het het voeden problemen kan veroorzaken. De eendenmosselen kunnen de slokdarm van sunfish belemmeren. (Ref. 55063). Deze vis werd geregistreerd in het Guinness Book van Wereldrecords als zwaarste knokige vissen en als vissen met de meeste eieren. (Ref. 6472). In het algemeen, wordt deze vis niet gebruikt als voedselvis, maar sommige mensen beschouwen de vissen als delicatessen. (Ref. 30573). De vissen kunnen gegeten vers zijn en geroosterd. (Ref. 9988). De vis wordt gebruikt in de Chinese geneeskunde. (Ref. 12166). De soorten Mola kunnen de zelfde toxine bevatten zoals pufferfish en de stekelvarkenvissen (Ref. 13513). De vis past niet aan de voorwaarden in gevangenschap aan (Ref. 12382, 37040). De jongeren worden gegeten door de zeeleeuwen van Californië in de Baai van Monterey.</p>
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This example demonstrates clearly, that improvements of the translation quality largely depend on properly designed source text (i.e. strictly considering the rules for machine translation for source text design). The issue of missing terms (i.e. no translation available at present) or wrong translated terms are easy to solve by just adding those terms (and providing proper translation) to the EU-Systran dictionaries. ANNEX I presents some additional rules to obey for source text compilations. They are complementary to the rules already submitted with the major final report of WP-11 and include some of the experience obtained from the online testing as described above.

With this report, just an example of the "on-line" testing process was presented; modifications applied in a similar manner to other sources in FishBase (e.g. other species summaries, and for "Distribution" and "Morphology") resulted in similar improvements. In summary, for "Biology" and "Distribution" text, the source text modifications were the most efficient means, for the "Morphology" field, a precise customized dictionary is the most efficient measure (due to the use of many specific terms).

Terms which were recognized as not yet included into the dictionaries of the EU-Systran system were gathered, wrong translations corrected and a list was compiled which will be delivered to the EU-Systran system. At present, translations of these additional terms are available in German and hopefully soon, with the help of the "Volunteer translation service by email" tool (see Task No. 3, this report), also in other languages.

**Task 2: Picking up loose ends with the Commission translation service (how can others get access; how can others participate in further developing specialized dictionaries).**

**Deliverable: Agreement with the EU-Translation department on other systems which may use their MT-Service. Report how other systems can connect to the system and can contribute specialized dictionaries; list of most missing topics in the dictionary library of the EU-MT service under consideration of the topic biodiversity.**

**Background:** In accordance with our working plans, we would like to encourage other systems to make use of the strategies & techniques developed from ENBI, WP-11 to realize multi-lingual access to their system. In order to make the results and achievements of the translation package popular to other systems we further seek for financial support to be able to visit database manger and to present the strategies and techniques as developed in WP-11 on multilinguality of web-based information systems. One major prerequisite for this approach is a statement from the DGT which confirms that they grant access to their MT facilities to other suggested information systems (e.g. GBIF).

For that reason, it was required to tighten the contact to the Directorate general for Translation in Luxembourg, thus the DGT was contacted and a meeting date was arranged for the 31<sup>st</sup> of January 2006. The meeting took place at the DGT in Luxembourg; the following participants were attending the meeting: **Josep Bonet** (Head of the Unit Multilingualism and Terminology Coordination), **Alain Reichling** (Head of Sector Web Translation, recently replacing the previous contact for ENBI, Cameron Ross, who moved to another position), **Carlo Mergen** (Administrator MT-Team) and **Bernd Ueberschär** (Project Manager ENBI WP-11).

Following the dissemination plans of WP-11, a number of issues were discussed.

- i) a draft for a Memorandum of Understanding (MOU) was compiled and presented in the meeting from Bernd Ueberschär in behalf of ENBI; the conditions for the ratification were discussed.
- ii) strategies on how other systems can get access to the EU-MT service and how can other systems participate in further developing specialized dictionaries were discussed
- iii) which organisations/ information systems are qualified to use the free DGT translation service
- iv) technical issues such as the response time for translation requests were addressed.
- v) outlook on the development of translation techniques in relation to MT of website translation (statistical translation, translation memory)

- vi) implementation of new language pairs into the EU-Systran system (e.g. English – Swedish and the languages of the new members of the European Union).

The meeting was considered to be very productive. A draft MOU was submitted in the meeting from Bernd Ueberschär (the draft is attached as ANNEX II) and is now circulating in order to pass an internal decision process in the DGT. Since this was considered as an official memorandum, the head of the DGT has to approve the MOU; therefore it can take some time to confirm on final agreements. In this context it was mentioned in the meeting from DGT staff, that the translation service which was provided to ENBI and FishBase resp. is not part of the generic DGT mandate. The cooperation with ENBI was a voluntary service and a new approach to make the DGT service available for external purposes. Thus, other systems cannot automatically claim for this service. However, the MOU which was suggested was designed to provide a formal agreement from DGT in order to make sure, that the investment of other systems (e.g. on the compilation of dictionaries for their systems and other effort) is worthwhile and will eventually be supported from the DGT translation service. Since the DGT position in the Commission is to serve as an administrative service body for the other DG's, it has not the power to change its mandate by himself. From the DGT members in the meeting, it was recommended, that projects such as ENBI encourage the head of their EU funding bodies (in case of ENBI the DG Research) to promote inside the commission that these kind of services will developed into an official component of the DGT's mission. We will approach the scientific officer in charge for ENBI and will ask about options for related activities.

Information systems which want to use the translation service of the DGT needs to make apparent, that major funding comes from the EU. GBIF for example was discussed as a system which certainly qualifies for the use of the DGT service.

The implementation of special dictionaries is basically feasible in the future, however, since the DGT just goes through another re-structuring process, there was no clear agreement, how the implementation of special dictionaries e.g. on birds or butterflies (suggested, an information system on birds or butterflies applies for MT) technically can be managed with the existing staff. It was discussed, if the implementation of dictionaries can be facilitated with external funding; it was concluded that this is an option; however, the funding must not come from the EU.

The response time for translation requests from FishBase was considered to be somewhat slow. This issue was addressed in the meeting from Bernd Ueberschär. The staff of DGT claimed however, that their technical power (Web server, connection the Internet, Backbone etc.) is the latest technology. The machine translation service of the DGT provides about 2000 translated pages/day. Probably, the technical process of the translation itself (which is not trivial), and the scripting to present the translation inside of FishBase, is the time consuming process. This issue will be picked up later again and investigated for improvements.

The present status of new translation technologies were briefly discussed, including the options to use new technologies for machine translation of FishBase and systems to follow. It turned out, that technologies such as statistical translation and translation memory are not useful at present for systems like FishBase and will not improve the translation quality. Again, it was confirmed, that rather source text modification and carefully prepared dictionaries and assignment of proper domains are the most powerful options for improvements.

The issue of new language pairs was discussed. At present, the EU-Systran system supports 7 language pairs with English as the source language:

<p><b>From English into</b></p> <ul style="list-style-type: none"> <li>• Dutch</li> <li>• French</li> <li>• German</li> <li>• Greek</li> <li>• Italian</li> <li>• Portuguese</li> <li>• Spanish</li> </ul> <p><b>From Spanish into</b></p> <ul style="list-style-type: none"> <li>• English</li> <li>• French</li> </ul> <p><b>From Greek into</b></p> <ul style="list-style-type: none"> <li>• French</li> </ul>	<p><b>From French into</b></p> <ul style="list-style-type: none"> <li>• Dutch</li> <li>• English</li> <li>• German</li> <li>• Italian</li> <li>• Portuguese</li> <li>• Spanish</li> </ul> <p><b>From German into</b></p> <ul style="list-style-type: none"> <li>• English</li> <li>• French</li> </ul>
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Table 2: Currently, EC Systran offers translation for 18 operational language pairs (or combinations).

Translation from English into another language is the most interesting option for most of the information systems in the Internet which might ask for MT support. The present portfolio of language pairs (from English to...see Table 2) will not be extended in the close future. For some languages, translation is only available at present into one direction, for example, Swedish > English is available, but not English > Swedish. For the time being, FishBase has to live with the language pairs as presently existing in the EU-Systran system.

In addition, the Commission has a number of prototypes at its disposal. Greek-English, French-Greek, Portuguese-English/French and Dutch-English/French have all been developed on a co-financing basis with the EU Member States and the Systran group, which has also provided Italian-English/French. The Commission has just completed a project for Danish-English and Swedish-English. There have also been co-financing projects for Finnish (Kielikone company), Hungarian, and Polish (both Systran group). This progress might be relevant for certain information systems in the future which want to offer translation.

### **Task 3: Develop a prototype for the "Volunteer translation service by email"**

**Deliverable: Detailed technical instructions how others systems can set up a "Volunteer translation service by email" and programmers script.**

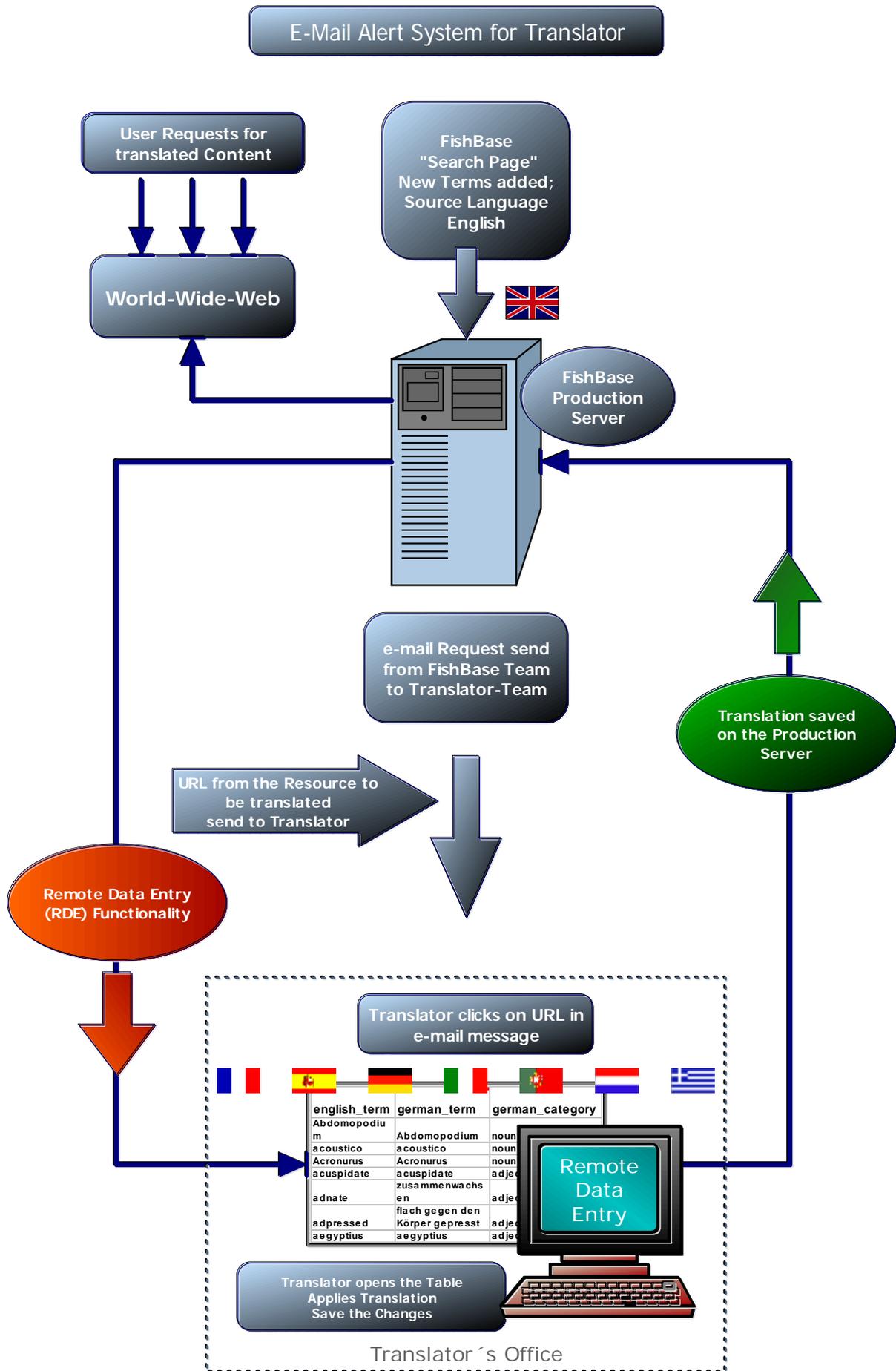
**Background:** Another issue which was not sufficiently treated in WP-11 but is essential for long-term maintenance of multi-lingual web sites is a "Volunteer translation service by email". Basically, multilinguality of databases needs long-term commitments of translation partners to keep content up-to-date in different languages. Since every change in the web site now needs translation, a list-server-type email approach of sending terms that need translation to all translators needs to be established: the system should automatically notify the translator who can click a link and can enter the translation directly into the translation table. However, this should be a quick and easy procedure, otherwise, it is too difficult to keep the system content up-to-date in all languages and long-term commitments of translation teams would be questionable.

A "Volunteer translation service by email" which is easy and reliable to operate needs a system, which supports remote data entry (RTD). RTD means, that a user with respective access rights (account, password) can access data resources on a remote server from his own desktop in his office via Internet connection inside of a browser window. The user (in this case a translator) can apply changes and corrections and can save the data on the remote server. The applied changes are then immediately visible in the Internet. This technique is very efficient and easy to use, since the user can apply changes from any place in the world, just a PC with Internet connection and a common browser is necessary.

The FishBase production server in the Philippines supports RTD routines to edit tables in FishBase, and since the original database FishBase resides on this server (from there, the mirror sites get the monthly updates) the conditions and existing technical framework were promising to establish a prototype of a "Volunteer translation service by email".

The following flow chart (Fig. 1) depicts the processes involved in such a system.

*Fig. 1: Each time when new content was added to the information system which needs translation, the FishBase team will send individual e-mails to the translator team with the respective URL link of the table with the new content (URL: Uniform Resource Locator, the global address of documents and other resources on the World Wide Web). The translator then clicks on the link and, after passing the log-in procedure, the translator can open the table or form (located physically on the FishBase server in the Philippines) with the terms and phrases to be translated. When the translation was entered into the table, the translator has just to confirm to save the entries and those changes are immediately visible on the Web server. The entire process will only take some minutes for the translator.*



At present, the technical framework was established with support of FishBase staff and the necessary script was programmed. Those translators who committed themselves to volunteer with the translation in the long-term range will be included now into the evaluation process of the system. When testing of the system is successfully finished, the script and the advisements how to establish RTD on a web server will be available as downloadable files from <http://www.enbi.linguaweb.org>.

The volunteer system involves both, the tables for static translation and the dictionaries for the Systran machine translation engine. New terms will be gathered for certain periods and frequently forwarded to DGT in order to further improve machine translation.

## **ANNEX I: Guidelines to help you write text for machine translation**

### **Use short sentences**

Limit your sentences to a maximum of 25 words. Longer sentences are too difficult for the machines, and are more likely to be ambiguous. It was found that this rule was the most important one.

### **Spell check your document**

If a spell checker cannot recognise a word, then a translator will leave the word un-translated. Also, the spell checker will often pick up mistakes that don't matter to a human, like leaving out the space between sentences. The spell checker will not correct mistakes like using 'to' when you mean 'too' or 'two', so you will have to find those mistakes yourself.

### **Avoid metaphors**

Metaphors often don't make sense after translation.

### **Keep pronouns to a minimum**

Pronouns are words like it, him and those ones. Pronouns are used instead of nouns that appeared earlier in a sentence or in a previous sentence, as shorthand. But different languages use different word orders, so your meaning can be lost. Also some languages use different genders for different objects, unlike English. A machine (translating from English to French) will translate 'it' as 'il'. 'Il' could mean 'he' or 'it' to a French reader, so it may be unclear what you are referring to.

### **Spell things out instead of using abbreviations or initials**

Machine translators will not understand abbreviations.

### **Keep your adjectives and adverbs near the words they refer to**

In complex sentences, adjectives can become separated from their nouns and adverbs separated from their verbs. Keep sentences simple, and this won't happen.

### **Use correct grammar and punctuation**

Use simple grammatical structures. Consult a style guide, to make sure that you are writing standard clear English. For example 'make sure that you are writing', not 'make sure you are writing'. The first version is clearer and easier to translate. It was advantageous, to apply a full stop before and after a reference was cited (see Task 1, this report). This may look strange, but helps the translation engine to translate with fewer errors and will certainly not annoy the English source text reader.

### **Avoid idioms, slang and jargon**

The reasons for this are obvious. Such words are either impossible to translate, or may be translated wrongly.

### **Avoid ambiguous words**

This is a difficult rule to follow. We don't notice which words have more than one meaning, because we pick the right meaning for the context. Machine translators don't understand the context, so they may pick the wrong meaning to translate. The word 'right', for instance, can mean 'the opposite of left', or 'correct', or 'privilege', among other meanings. 'Harder' can either mean 'more difficult', or mean 'less soft'. Use a word with a single meaning, such as 'correct', instead of 'right', where you can. An example from the testing process in this report was the verb "projects" in the sense of "... its dorsal fin projects above the water...". The translation engine translated this as a "project". Instead, "beats" was applied; it has a very similar sense in this context, and was translated in a manner, that the message was correct in the respective context.

### **Avoid compound verbs**

These are verbs like "set off", "head up", "give over" and "bring out". Compound verbs are usually mistranslated.

### **And finally: use a machine translation to translate your text and then translate it back again**

If you followed the rules, and your text survives this test with its meaning intact, it is likely that the translation makes sense too. But remember there are some problems that this test will not show up. If a word cannot be translated, then it will appear in the re-translation. That looks OK to you, but means nothing to the person reading the first translation. If you use a metaphor, like 'the heart of the problem', then a word like 'heart' will be translated literally both ways, and so looks OK to you. But it may not mean anything in the first translation, just as if you had written 'the liver of the problem'.

**ANNEX II: Draft for an official Memorandum of Understanding which was submitted in the above mentioned meeting.**

**MEMORANDUM OF UNDERSTANDING ON THE EXTERNAL USE OF THE  
MACHINE TRANSLATION SERVICE OF THE DIRECTORATE GENERAL  
TRANSLATION**

**between**

**the ENBI-Project, here represented from the ENBI-Worck Package 11 (WP 11)  
Coordinator Bernd Ueberschär, Leibniz-Institut für Meereswissenschaften (IFM-  
GEOMAR)  
Düsternbrooker Weg 20  
24105 Kiel, Germany**

**and**

**European Commission, Directorate General Translation, represented here from the  
head of the Multilingualism and Terminology Coordination, Josep Bonet-Heras.**

This Memorandum of Agreement entered into this **31. January 2006** by and between:

**the ENBI-Project, here represented from the ENBI-WP-11 Coordinator Dr. Bernd  
Ueberschär, Leibniz-Institut für Meereswissenschaften (IFM-GEOMAR)  
Düsternbrooker Weg 20, 24105 Kiel, Germany**

**and**

**the Directorate-General for Translation of the European Commission (DGT),  
represented here from the head of the Multilingualism and Terminology Coordination,  
Josep Bonet-Heras,**

**WITNESS THAT:**

**IFM-GEOMAR** is an Institute associated with the University of Kiel with the mandate to conduct research on physical, chemical and biological processes in the ocean and whereas **IFM-GEOMAR** has executed a multilingual work package of the ENBI-Project (**E**uropean **N**etwork for **B**iodiversity **I**nformation); **IFM-GEOMAR** is a non-profit organization mandated for education and research.

Whereas the mission of the **Directorate-General for Translation (DGT)** is to support and strengthen multilingualism in the European Union and to make EU enlargement a success by incorporating the 20 official languages into the Union's daily work and by improving multilingual communication in the enlarged Union; to pursue the Commission's strategy designed to match the supply of and demand for translation in a cost-effective way; to promote inter-institutional cooperation in the translation field by optimising the use of resources for internal and external translation, compilation of terminology and the development of multilingual IT tools; to further improve the quality of both internally and externally translated documents and raise productivity; to develop its role as the language service par excellence in Europe.

Whereas, the **IFM-GEOMAR** and the **European Commission, Directorate General Translation (DGT)**, having common interest to promote multilingualism and to facilitate multi-

lingual access to Biodiversity information systems in the Internet and have agreed to collaborate to meet the objectives of this task.

Whereas, the specific purpose of this Agreement is to support and to enhance multi-lingual access to Biodiversity databases in the Internet in at least 8 languages (English, German, Dutch, Spanish, Portuguese, French, Greek and Italian).

I) **THEREFORE**, in consideration of the aforementioned, **IFM-GEOMAR** and **DGT** mutually agree, in accordance with the rules and conditions which are valid for the use of the machine translation service of the DGT, as follows:

#### **Responsibility of ENBI**

- ENBI WP 11 will encourage other information systems to make their knowledge available in other languages than English.
- ENBI WP 11 will advise on the necessary steps to realize multilinguality. In support of this, ENBI WP 11 has delivered the necessary technical means (e.g. scripts, dictionaries, look-up tables, customized dictionaries) and a document, which is supposed to facilitate database manager to implement the necessary strategies and techniques to their system.
- This document and the technical means are freely available on request from the ENBI-Project.
- ENBI WP 11 will provide on request the script which was compiled for an "on the fly" in FishBase to the administrator of the system which is supposed to avail the service of the DGT

#### **Responsibility of DGT:**

- The DGT declares to support the implementation of multilinguality to other systems than FishBase and will provide their website translation service including other means necessary for qualified translation on request for non-commercial information systems which qualify in accordance with the rules of the DGT.
- The DGT will support, if necessary, the implementation of specific domains and of customized dictionaries into their EU-Systran system if necessary for qualified translation.
- ????? Under discussion

## **II Coordinators**

**IFM-GEOMAR** Bernd Ueberschär  
Project Coordinator ENBI WP-11

**Partner DGT** Josep Bonet-Heras, Carlo.Mergen  
Head of Unit and Project Leader

### III Terms

- 1 The Agreement covered under this document will begin on **XX.XX.2006** and will be applicable for an unlimited period. The DGT may, however, stop its external translation service at any time if advisable due to technical or security reasons which are in the responsibility of the system which is using the translation service. The DGT will immediately inform the responsible person of the information system and will negotiate about a reset of the service.
- 2 DGT declares to support the implementation of user dictionaries into the EU Systran system primarily without charging the database provider; however, in case of e.g. shortage in personnel capacities or other justified reasons, DGT may ask the dictionary provider for extra funding to support the implementation of his customized dictionaries in a reasonable time.
- 3 The dictionaries will be compiled from the database manager of the information system which wants to make use of the translation service of DGT and have to be delivered to the DGT in an appropriate format.

### IV Other Terms

- 1 The results and other benefits arising from this cooperative project will be shared by the parties contributing to this project. ENBI, the EU in general and the DGT will be acknowledged as donor in all databases connected to the DGT translation service and in publications resulting from this Agreement.
- 2 The DGT may stop its external service for databases if any reasons are given which may harm the translation server, or if any misuse of the translation service is detected.
- 3 Any problems or disputes or disagreements relating to this Memorandum of Agreement will be resolved by negotiations between **IFM-GEOMAR** and **European Commission, Directorate General Translation**.
- 4 All terms and regulations which are explained in ANNEX III apply under any circumstances.

**IN WITNESS WHEREOF**, the parties hereto have affixed their signatures on the date first written above.

**European Commission,  
Directorate General Translation (DGT)**

By:

Josep Bonet-Heras, Head of the Multilingualism and Terminology Coordination

Date:

**Leibniz-Institut für Meereswissenschaften  
(IFM-GEOMAR)**

By:

Bernd Ueberschär, ENBI Project Manager

Date:

## **ANNEX III: Rules and Regulations which apply to any User of the DGT Translation Service**

### **ANNEX I: Request for DGT Machine Translation Service,**

On request, MT it can be made available to public administrations, schools and universities in EU Member States.

This service is available to registered users in:

- the European Commission;
- other EU institutions, agencies and bodies; and
- public administrations in the EU Member States.
- 

Access procedure. Those working for public administrations in the Member States must register in order to obtain a user name and password.

The ECMT service is provided on an "as is" basis: the European Commission does not warrant that the service is error-free, or that it will meet the user's particular standards, requirements, or needs. Accordingly, the Commission accepts no responsibility or liability whatsoever with regard to any problems incurred as a result of using the service.

### **ANNEX II: Important legal notice which applies when using the DGT machine translation service**

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Although you can browse through most of these Web Sites without giving any information about yourself, in some cases, personal information is required in order to provide the e-services you request.

Web Sites that require such information treat it according to the policy described in the Regulation mentioned above and provide information about the use of your data in their specific privacy policy statements.

**In this respect:**

- For each specific e-service, a controller determines the purposes and means of the processing of personal data and ensures conformity of the specific e-service with the privacy policy;
- Within each Institution, a Data Protection Officer ensures that the provisions of the Regulation are applied and advises controllers on fulfilling their obligations (see art. 24 of the Regulation);
- For all the Institutions, the European Data Protection Supervisor Pdf [27 KB] will act as an independent supervisory authority (see art. 41 to 45 of the Regulation).

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1. Information services that provide citizens, media, business, administrations and other decision makers with easy and effective access to information, thus increasing transparency and understanding of the policies and activities of the EU;
2. Interactive communication services that allow better contacts with citizens, business, civil society and public actors thus facilitating policy consultations, and feedback mechanisms, in order to contribute to the shaping of policies, the activities and the services of the EU;
3. Transaction services that allow access to all basic forms of transactions with the EU, e.g. procurement, financial operations, recruitment, event enrollment, acquisition or purchase of documents etc.

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\* To whom your information is disclosed. The EU will only disclose information to third parties if that is necessary for the fulfillment of the purpose(s) identified above and to the mentioned (categories of) recipients. The EU will not divulge your personal data for direct marketing purposes;

\* How you can access your information, verify its accuracy and, if necessary, correct it. As a data subject you also have the right to object to the processing of your personal data on legitimate compelling grounds except when it is collected in order to comply with a legal obligation, or is necessary for the performance of a contract to which you are a party, or is to be used for a purpose for which you have given your unambiguous consent;

\* How long your data is kept. The EU only keeps the data for the time necessary to fulfill the purpose of collection or further processing;

\* What are the security measures taken to safeguard your information against possible misuse or unauthorised access;

\* Whom to contact if you have queries or complaints.

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Many web pages on Europa have a "Contact" button, which activates your e-mail software and invites you to send your comments to a specific functional mailbox.

When you send such a message, your personal data is collected only to the extent necessary to reply. If the management team of the mailbox is unable to answer your question, it will forward your e-mail to another service. You will be informed, via e-mail, about which service your question has been forwarded to.

If you have any questions about the processing of your e-mail and related personal data, do not hesitate to include them in your message.