TU Clausthal

Interreg
Baltic Sea Region

EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

DAIMON

Overview of the structure and functionality of the Decision Support Software of the Technical University of Clausthal

EU STRATEGY FOR THE BALTIC SEA REGION
FLAGSHIP

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What uses the DSS and what produces the DSS?

Input

Data be processed

I.) Diverse relevant Data of Objects in the Baltic Sea **(Player I)** as:

- Munition
- Fish / Mussels
- Sediment

II.) List of Goods of Protection (**Player II)**
- Fishermen
- Tourists
- Shipping
- Flora/Fauna
- Constructions
- Fish
- Environment

III) Data/Facts/Models how Objects interact with Goods of Protections

IV.) Environmental Data like:
- Temperature, Oxygen
- Salinity, Current
- Depth of Objects, Position Good of Protection
- Shipping and Fishery Intensity

V.) External :
- Model for Wracks (Vraka)
- Ammunition database

DSS

The DSS makes the following processing steps:

- Analyses data regarding plausibility
- Involve external models, rules and actual (mostly environmental) data
- Combines all data and calculates neural based ratings about the objects and good of protection (assessment of the players)
- Combines the ratings and calculate the assessments of the players
- calculates an overall neural based situation assessment
- Links the situation assessment to legal and good practice documents to produce the final decision support
- Present an overall report

Output

Analysis and Decision Support

I.) Overall situation assessment regarding:

Object status of
- Munition
- Fish
- Sediment

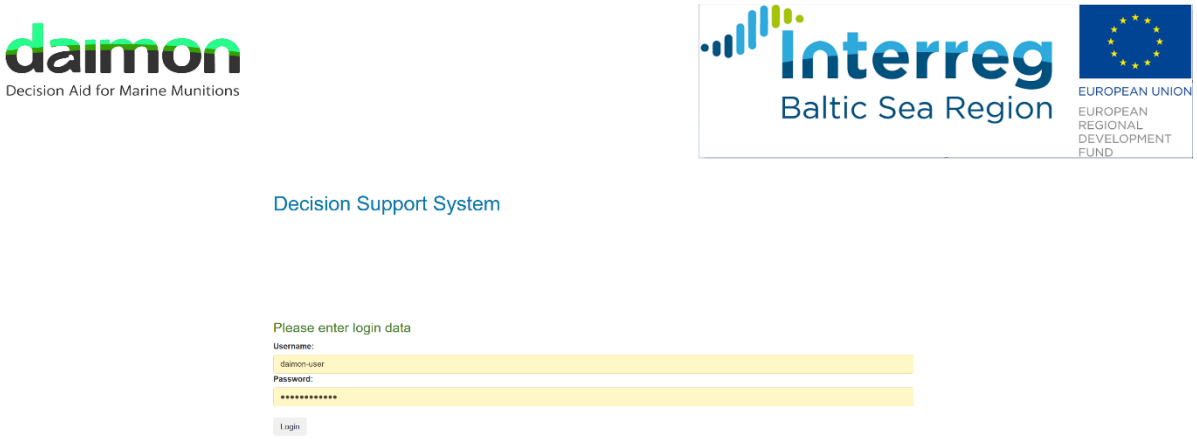
Goods of Protection status and influence of the objects regarding
- Fishermen
- Fishery
- Tourists
- Shipping
- Constructions
- Flora/Fauna
- Environment

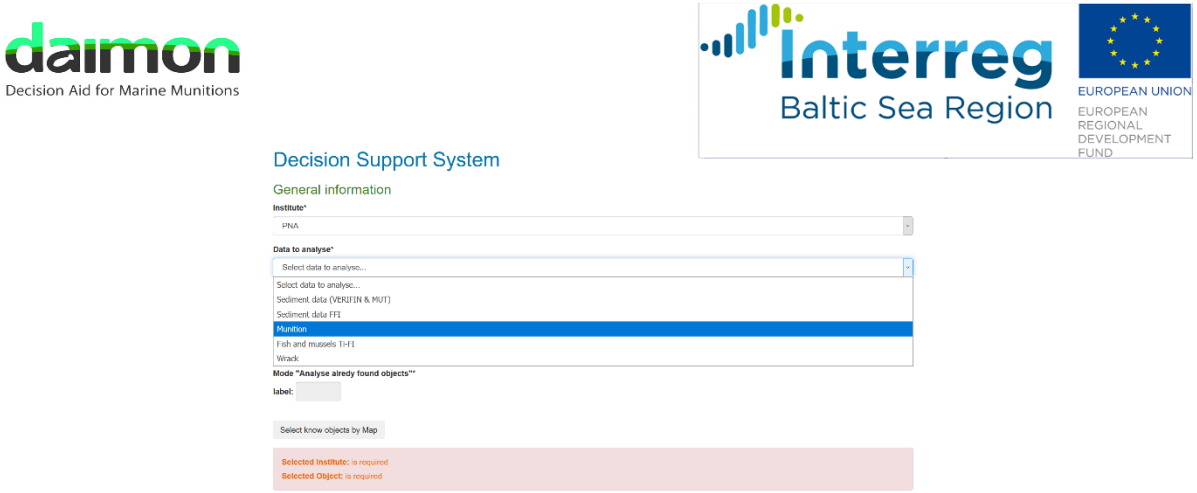
II) Out of the Assessment resulting Legal aspects

III) Out of the Assessment resulting documents of „Good Practice“ regarding Objects and Goods of Protection

Guiding Tour: TUC DSS – 5 Steps until Decision

Step I: Log in and select what you want to do





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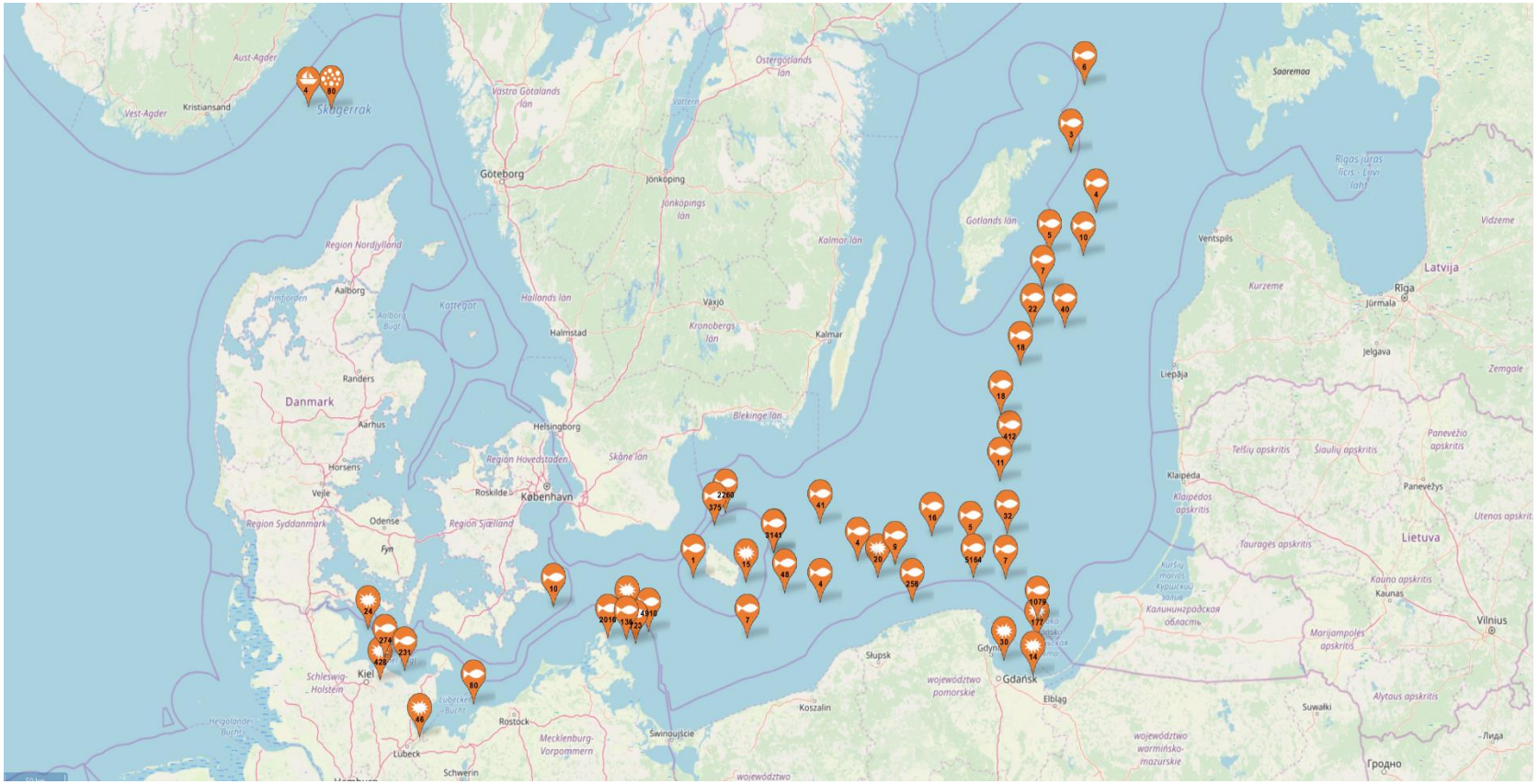
Step II: See the Object Data of the DSS



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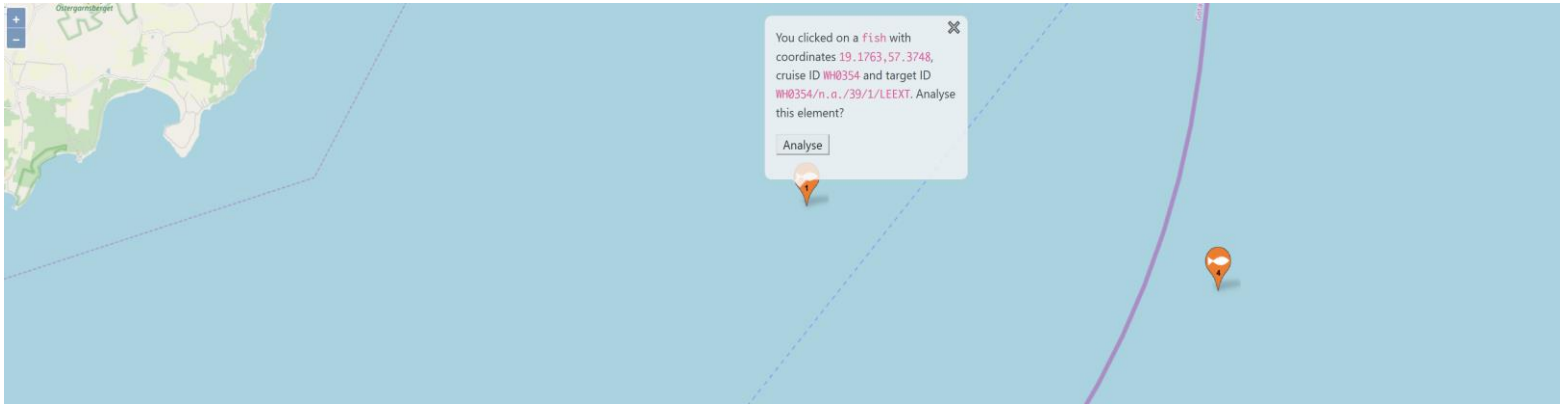
Step III: Select an Object of Interest



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Step IV: See and confirm Object and Environmental data,
choose Object of Protection,
lets the DSS work

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Decision Aid for Marine Munitions

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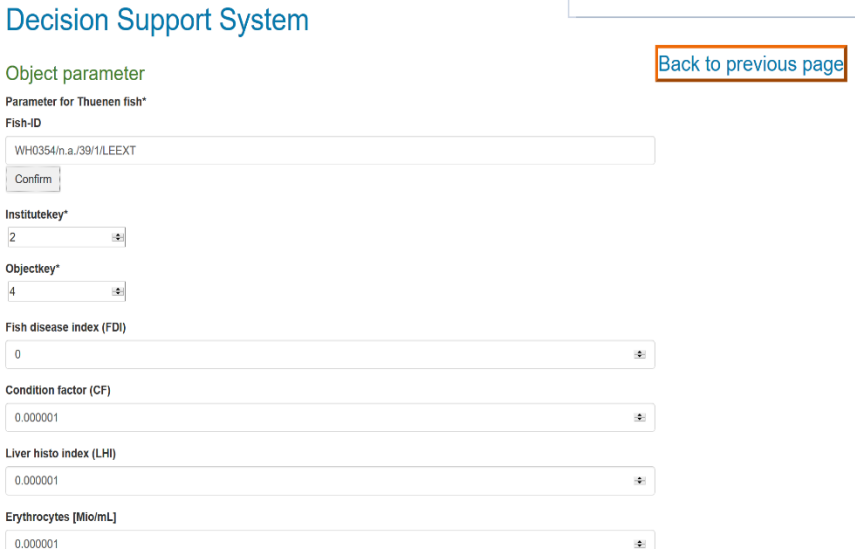

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Step V: See the final report of situation assesment, related legal aspects and good practise

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Decision Support System

General information

Your are locked in as:
Your institute is PNA.

DSS results

Overall color

Recommendation for action

Monitoring is necessary!
Limitation is necessary!
No fishing!

Object parameter

You have choosen Thuenen fish data to analyse.
The object you have choosen was found in Germany.
The object is inside the EEZ.
Fish disease index (FDI): 0
Condition factor (CF): 0.000001
Liver histo index: 0.000001
Amount of Erythrocytes: 0.000001 Mio/mL
Amount of Hemoglobin: 0.000001 mg/dL
Amount of Glucose: 0.000001 mmol/L
Hematocrit: 0.000001 %
Your estimated color is red.
Object color
Assumed object color

Parameter for object of protection

You have choosen fish as object of protection.
The object of protection is placed in Germany.
The object of protection is inside the EEZ.
The radius between object and object of protection is 178 m.
The distance between object and object of protection under the surface is 46 m.
Color of object of protection in case of leakage
Color of object of protection in detonation radius

You entered the following values for the environmental parameter:

Temperature: 14 °C
Salinity: 21.06 PSU
There is no current in the selected region.
The radius between object and object of protection is: 56 m
The object lies 19.02 m deep under the water surface
The oxygen saturation is: 19.02 %
The seabed is covered with sediment.
The object is in the sediment.
There are other objects in the surround.
The fishing intensity in the region is high.
The ship traffic intensity in the region is high.
The object was dumped 78 years ago.
Estimated color of environmental impact

Relating Links

Link to legal aspects

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4.7 EEZ of the Federal Republic of Germany in the Baltic Sea

Three letter code: DEU[Note]

Promulgation of 25 November 1994 by the Federal Republic off Germany concerning the establishment of an exclusive economic zone in the Federal Republic of Germany in the North Sea and in the Baltic Sea

I

The Federal Republic of Germany shall establish, as of 1 January 1995, an exclusive economic zone in the North Sea and in the Baltic Sea beyond the outer limit of its territorial sea.

II

The outer limit of the exclusive economic zone of the Federal Republic of Germany in the North Sea shall be a line connecting the following points:

E_0	53°43'30,8" N	6°20'49,7" E
E_1	53°45'03,0"N	6°19'58,3"E
E_2	53°48'52,9"N	6°15'51,3"E
E_3	53°59'56,8"N	6°06'28,2"E
E_4	54°11'12,0" N	6°00'00,0" E
E_5	54°37'12,0" N	5°00'00,0" E
E_6	55°00'00,0" N	5°00'00,0" E
E_7	55°20'00,0" N	4°20'00,0" E
E_8	55°45'54,0" N	3°22'13,0" E
D	55°55'09,4" N	3°24'00,0" E
S_7	55°46'21,8" N	3°21'00,0" E
S_6	55°46'21,8" N	4°15'00,0" E
S_5	55°24'15,0" N	4°45'00,0" E
S_4	55°15'00,0" N	5°09'00,0" E
S_3	55°15'00,0" N	5°24'12,0" E
S_2	55°30'40,3" N	5°45'00,0" E
S_1	55°10'03,4" N	7°33'09,6" E
S_0	55°05'59,4" N	8°02'44,4" E

The geographical coordinates of the above points shall be determined by reference to European Datum (ED 50).

The delimitation of the German exclusive economic zone in the North Sea shall be published in the Maritime Boundaries Charts 2920.

The outer limit of the exclusive economic zone of the Federal Republic of Germany in the Baltic Sea shall be a line connecting the following points:

1	54°45'24,0"N	10°13'06,0"E
2	54°42'49,7" N	10°16'07,9" E
3	54°40'29,6" N	10°18'29,9" E
4	54°37'59,9" N	10°21'18,4" E
5	54°37'15,4" N	10°22'27,6" E
6	54°35'56,8" N	10°27'15,9" E
7	54°34'37,0" N	10°31'58,5" E
8	54°33'06,0" N	10°36'50,0" E
9	54°32'39,8" N	10°39'37,3" E
10	54°32'49,2" N	10°43'59,0" E