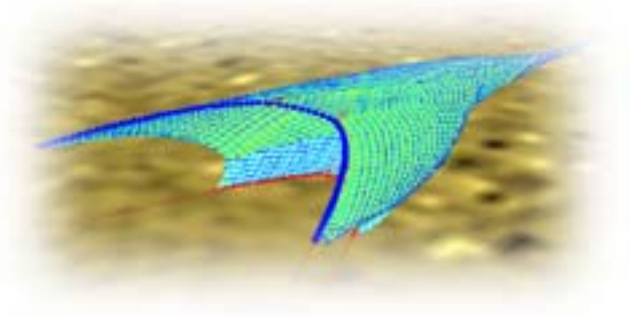
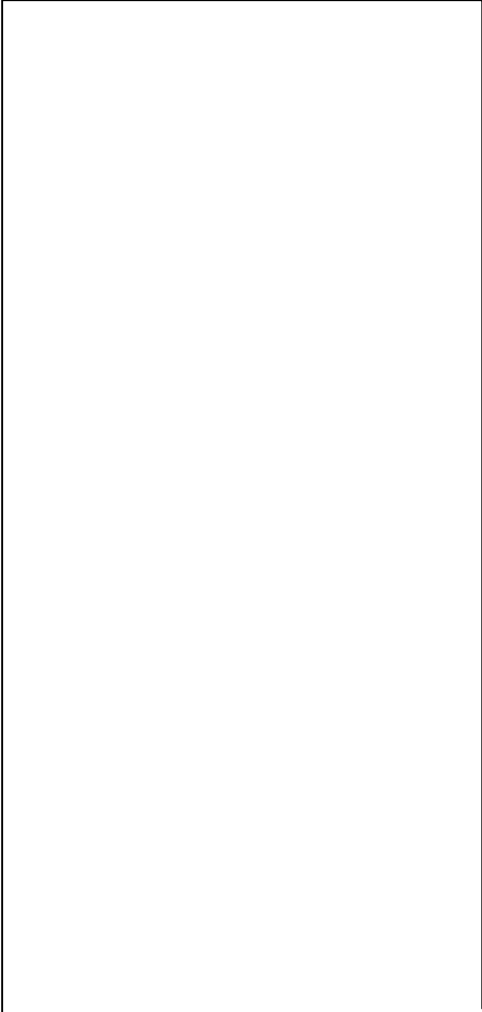


Exercises DynamiT



DynamiT

Ifremer

Training exercises
for new users

How to input the design
of a large meshes midwater trawl

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➤ Some action to exert on the software



Something to remember

Look at the design of the [47.75 / 43.75 trawl](#).

Look also at the tutorial “Pieces of theory”, section “What is a panel regarding DynamiT ?”
 Look also at the tutorial “Using the special meshes” to find an alternate solution for large meshes.

The major point regarding large mesh trawls :



- Up to now each trawl panel consisted of netting sections stuck together. Now, considering the fact that a DynamiT panel has a uniform numerical meshing (refined if necessary), each actual trawl panel will be subdivided in DynamiT-panels. There will be as many sub-panels as different meshings.

It may be possible to avoid the DynamiT TGM option.

1.1 Preliminaries

- Calculate the overhang in number of meshes for the panels of the first series of wide meshes (*only for DynamiT version 1.0*).
- Investigate the diameters of the braids constituting the netting panel (in the manufacturers catalogues or even in the fishermen's handy guide book).

1.2 Entering the trawl design

Create a new TRG file.

1.2.1 Enter all the nettings constituting the trawl.

- Click right in the blank area (or menu « Trawl Gear »).
 - Choose the menu « Netting panels ».
 - Press the button « add ».
 - Complete the fields.
 - Choose a colour for 2D and 3D display.
- It is absolutely necessary that the fields « Designation » and « Material » of the dialog box « Netting panels » be filled in.
 - When not sure of the meaning of a field, ask for the contextual help (F1 or “Help” key).
 - Keep to the numbering of the trawl design so as to facilitate checking.
- Once a netting panel completed it can be saved in the library for later use.
 - Press key OK.
 - Proceed the same way for all the netting panels.
 - Check that there is no mistake after the data table.

1.2.2 Save TRG file

- Repeat this step regularly !

Description	Material	Runnage (m/kg)	Mesh ...	Dia...	Yarn stif...	Appare
A	PA	60	5000	6	200000	0.1
B	PA	270	400	2.8	200000	0.1
C	PA	400	200	2.3	200000	0.1
D	PA	760	1.5	1.5	200000	0.1
E	PA	1060	40	1	200000	0.1
A2	PA	60	4000	6	200000	0.1
A3	PA	60	3000	6	200000	0.1
A4	PA	60	2500	6	200000	0.1
A5	PA	60	2000	6	200000	0.1
F	PA	1060	60	1	200000	0.1
G	PA	1550	20	0.6	200000	0.1
H	PA	1550	12	0.6	200000	0.1

1.2.3 Define the first trawl panel

- Choose the « Netting section » tool.
- Click in the window where the new panel will be placed.
- Enter the name of the panel.
- Choose to either include this panel in the drawing or to leave it out.

- The side panels are always described twice in a TRG file. For them not to appear twice on the drawing click off « Include in Layout ».
- The position may be that of the default value ; it must be modified to get the panels to face each other.
- The term « Real meshes » is used for the very wide meshes.

- Validate the choices.

1.2.4 Define the parts of the panel

The « Netting section » dialog box appears .

- Choose the nettings which constitutes the part.
- Enter the number of meshes and the possible overhangs which define **the first part** of this panel .

It is not necessary to complete the field « designation ».

Generally, one enters the square (or the belly), then the wing ends.

- Try to click to add a new panel under the first one ; it will be constituted by smaller meshes (4000 mm).

It appears that DynamiT refuses to take this netting section into account owing to the fact that the meshing is different : it is thus necessary to create a new panel.

- Define all the parts of the body of the trawl right to the cod-end.

The parts that are not in TGM will thus be « globalized » and added to the last TGM part.

- Define the part of a single wing (those of the symmetric wing will be obtained by copy once the strengthening ropes and floats at the right place).



The sub-panels making up a panel must have the same “designation” name . These are lined up by modifying the co-ordinates related to each sub-panel.

- Proceed the same way for the parts of the other panels.
- If a same part (for instance the cod-end) is found in both the netting panels, one can drag and drop (using the mouse) the part already defined onto the part being designed.

1.2.5 Entering the strengthening ropes

- Choose the « strengthening rope » tool.



Except in particular circumstances a strengthening rope must always superpose exactly on a netting panel side. DynamiT offers magnetism properties which automatically draw the strengthening rope extremities to the top of the panel. DynamiT proposes a length of strengthening rope by default, which is calculated after an opening corresponding to 90% of the meshes.

In the case of large meshes panels, the panels will be assembled together by sewing the large meshes together and not the side strengthening ropes.

- Click the mouse inside of the circle at the top of a netting section.
- Release the mouse inside of the circle at the opposite top of the panel.
- Enter the parameters of the strengthening rope concerned.
- Place the label of each strengthening rope so as to make reading easy.
- Choose tool « select ».

- Click right on a strengthening piece.
- Choose the position of the label.
- If necessary, adjust the policy size of the labels in the menu « File / properties ».

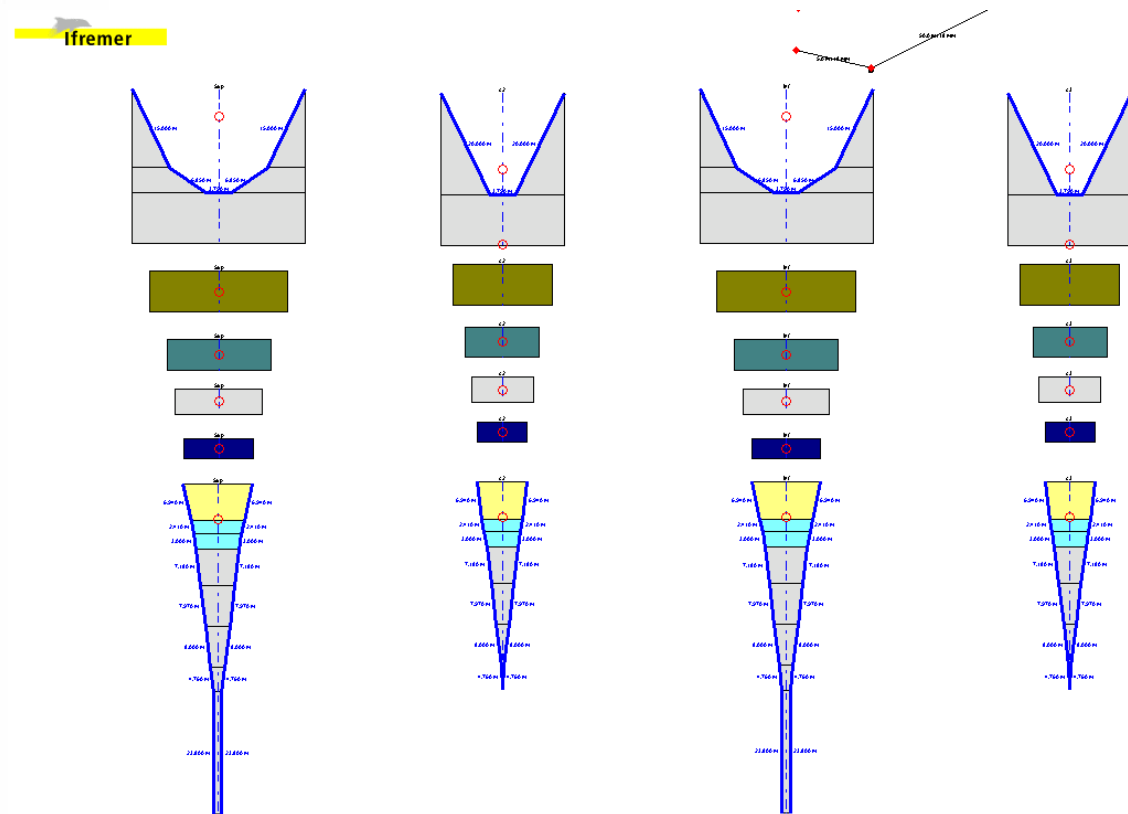
Notice that the square strengthening ropes cannot yet be entered.

Once all the strengthening ropes created on one side of the trawl, they can be copied without having to enter their parameters one more time.

- Choose the « select » tool.
- Click right on the strengthening rope.
- Create the symmetrical strengthening rope.

Notice that the labels are in the right place for the new strengthening ropes.

- Copy the wings and its strengthening ropes.
- Create the square strengthening rope.



1.3 Numerical meshing

- Change to “numerical mesh” mode.
- Using tab « globalisation », adjust the big meshes for each sub-part.
- Regarding the sub-panel with a globalized meshing it is important that the number of mesh knots be identical to that of the last sub-panel with a non-globalized meshing (in the present case 6 mesh knots).
- Add transition to refine the cod-end meshing.
- Once the meshing correct, create the three other panels.
- Add intermediate knots on the strengthening ropes (tick option).

1.4 Seams

- Join the sub-panels together with tools « **mesh seam** » and « side seam » for strengthening ropes.

Mind that there is a way to reduce the number of seams without altering the result.

1.5 Rigging

- Define a basic pair trawl.

For this purpose, let's consider the following characteristics :

bridle : 50 m,

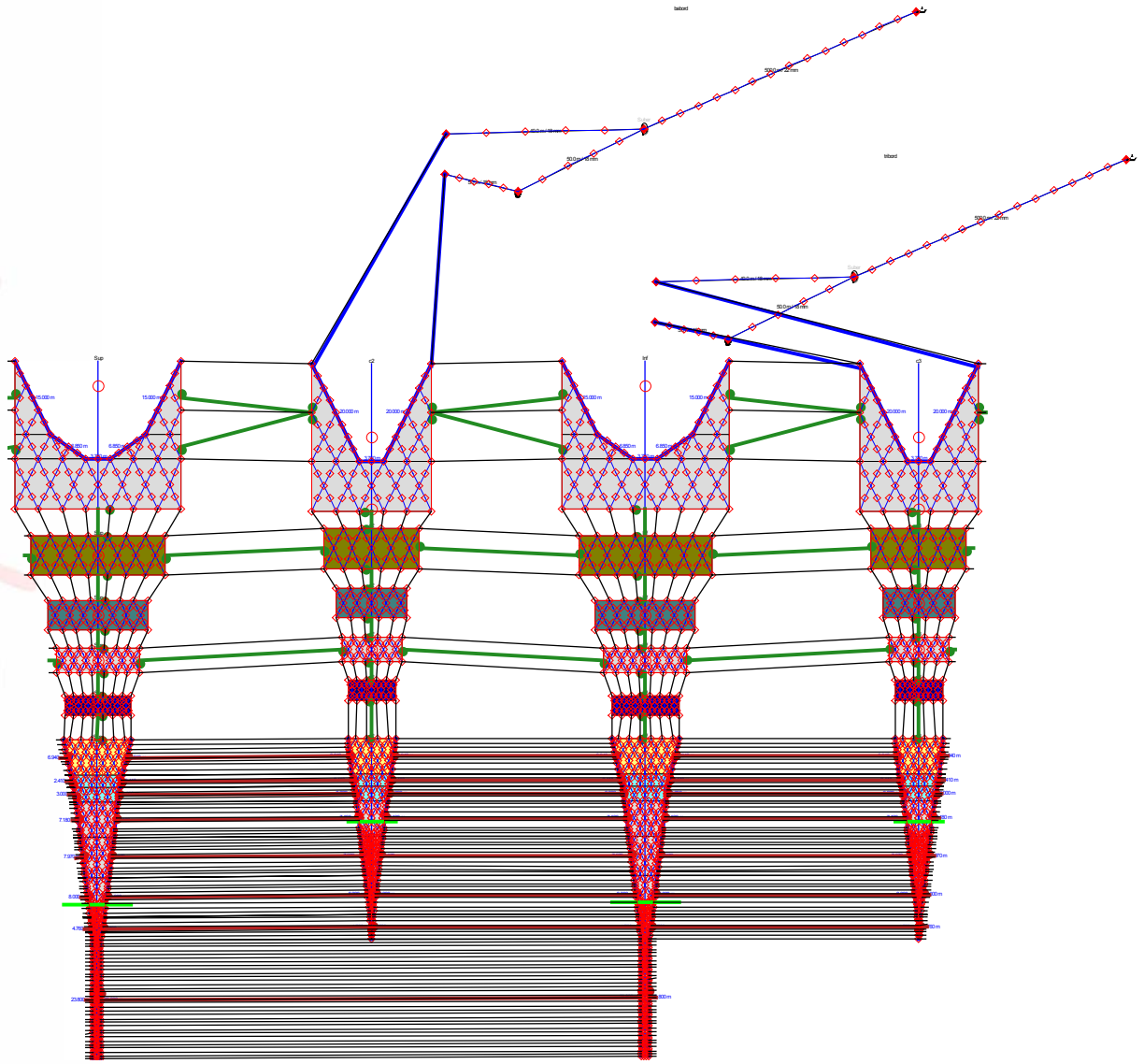
difference : 5 m,

warp : 500 m,

weight : 500 kg chain.

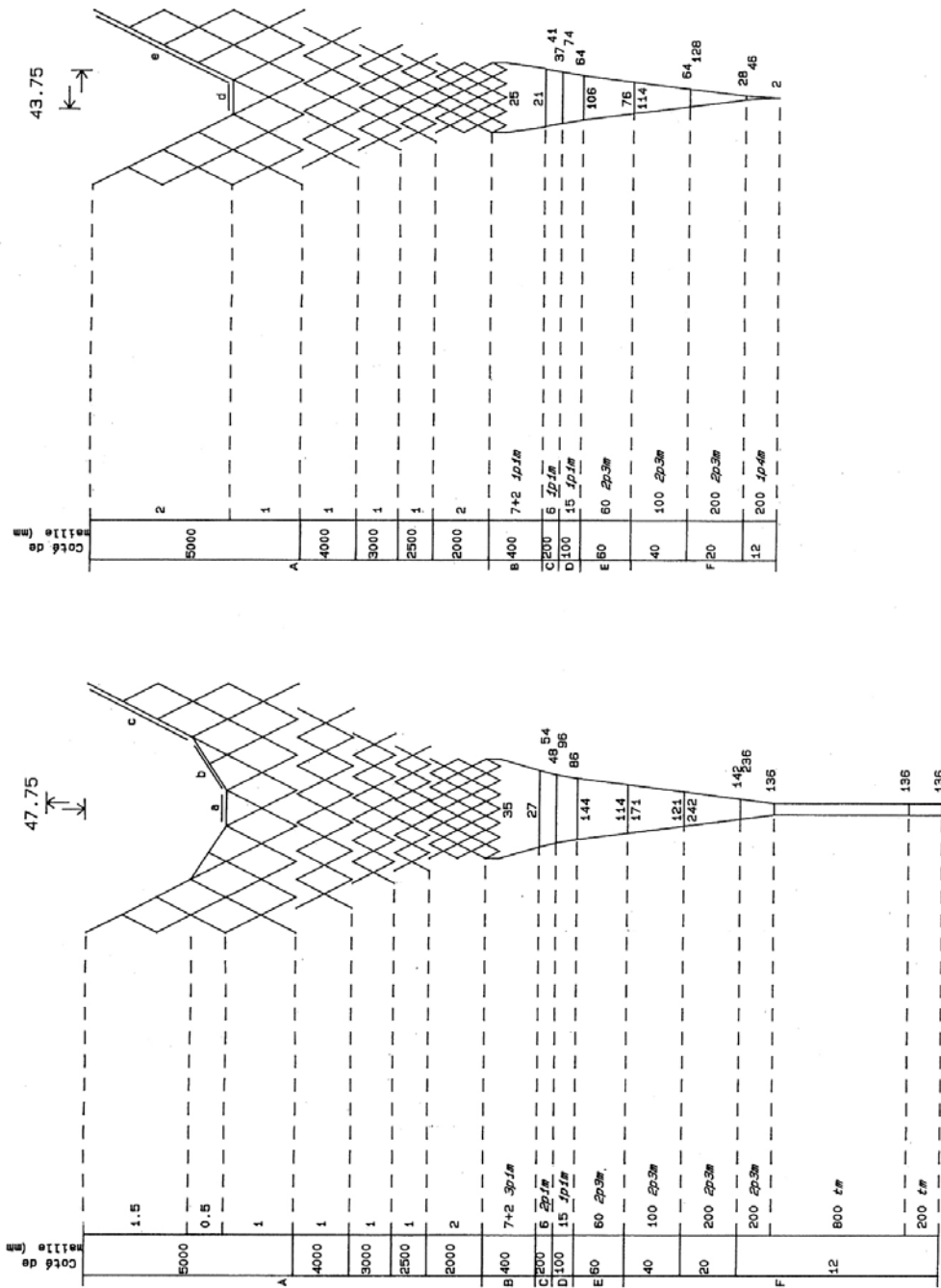
Distance between the two boats : 200 m.

- Link the rigging and the net together.



1.6 Simulation

- Enter the correct parameters for the simulation and start the calculation.
- Check that the operations are going on all right.
- Wait for convergence to occur.



LONG	MATERIAU	DIAM
a	3.75 m	ACIER 10.50
b	6.85 m	ACIER 10.50
c	15.00 m	ACIER 10.50
d	3.75 m	ACIER 10.50
e	20.00 m	ACIER 10.50

FORCE DU FIL PAR ZONE	PA
A	60. m/Kg
B	270. m/Kg
C	400. m/Kg
D	760. m/Kg
E	1060. m/Kg
F	1850. m/Kg

Maquette au 1/30 e. P.G.GESTIN
mai 1982
N.O. ROSELYS II

IFREMER LORIENT TECHNOLOGIE-PÊCHE 8, rue François Toulliec Téléphone: 97.83.46.47 Copyright du logiciel: CENTRE NATIONAL DE LA MER / IFREMER	Ref PGM4775R	CHALUT 47.75m. / 43.75m. TYPE PELAGIQUE A T.G.M. Espèces : DAURADE, BAR, POISSON BLEU Or-gigne : ISTPM BOULOGNE	1 BATEAU 250 ch. a 350 ch. Surface fil : 53.36 m2
	DATE : 23/03/88		

Design of the 47.75 x 43.75 large meshes midwater trawl