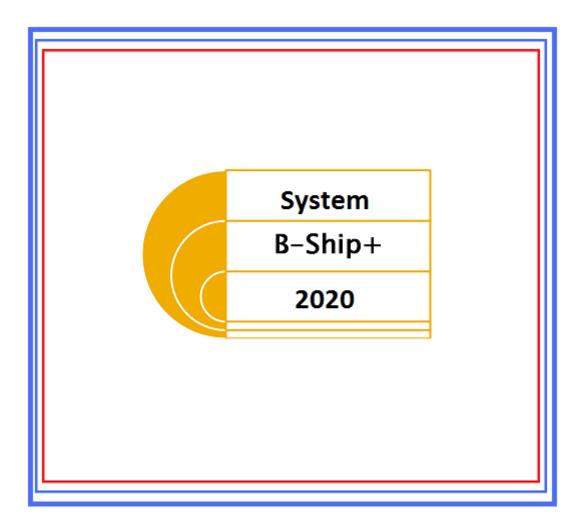
B-Ship+ CAD/CAM system for shipbuilding and machinery

Nikolay N. Poleshchuk, PhD Math. <u>http://poleshchuk.spb.ru/cad/eng.html</u> <u>npol50@yandex.ru</u>

Splash Screen

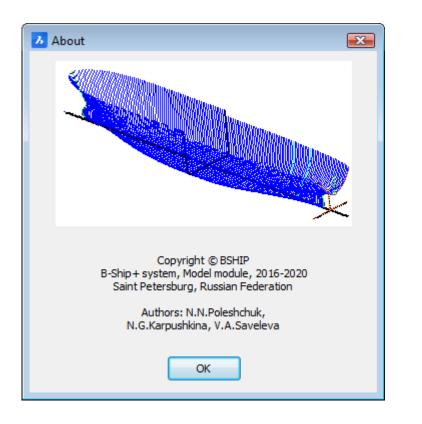


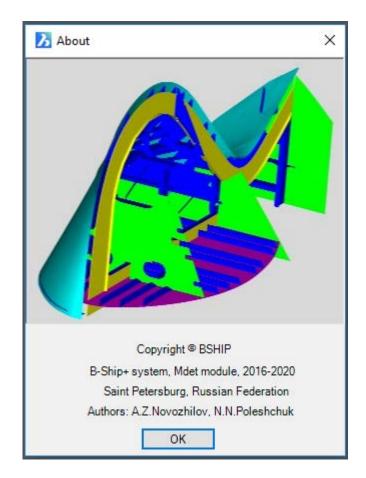
Application Field

- Shipyards (shipbuilding and shiprepair)
- Machinery enterprises
- Workshops working with sheet metal
- Design bureaux creating documents and CNC programs for ship or machine building

User Interface Language Selection

Select user interface language								
Current language: English								
Select new interface language:								
-Select language-								
Russian								
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German								
Spanish								
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Estonian								
Apply Exit Help								



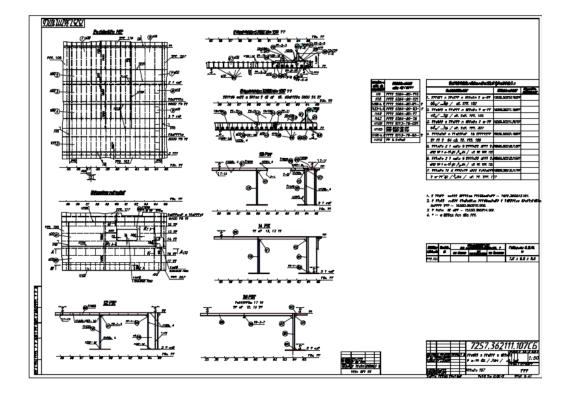


Main Goal

- The central object is **part**, or piece of structure (manufactured from sheet metal or profile bar).
- The system generates various information and docs for part manufacturing (for workshop technological operations).
- The most difficult technological operation is sheet cutting with CNC programs based on nesting maps of the sheet metal. CNC cutting programs can be extended with edge handling info (angle of bevel etc.).

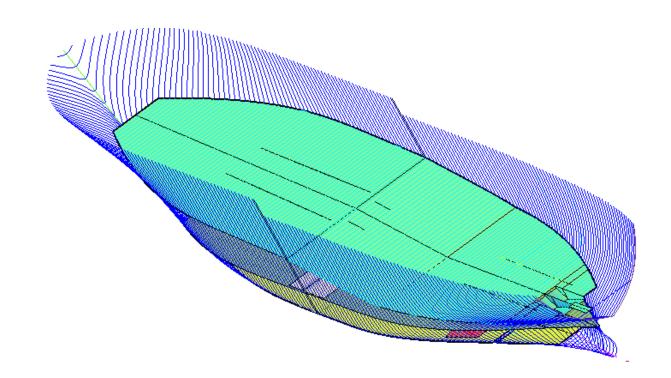
Input data (main path)

- Design drawings (dwg files)
- Parts lists



Input data (extended path)

- 3D wireframe or surface hull shell model (dwg)
- Imported 3D model sections from heavy CAD systems (Aveva, Foran, etc.)



Main Output

- CNC programs for parts manufacturing:
 - cutting routes
 - marking lines for layouts
 - marking text for labels
- DWG documents for parts (working part sketches)
- DWG documents for sheet nesting maps
- Excel tables with data for parts, nesting maps

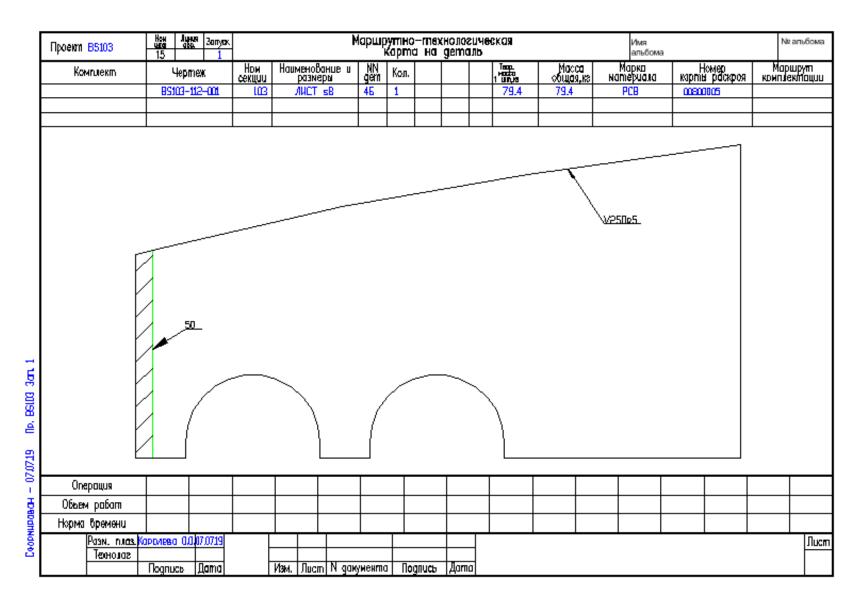
Extended Output

- Curved shell sheets development (approximation)
- Shell surface assembly and bending tools (templates, schemes etc.)
- Objects in 3D model built with specific drawing tools (loft, plaz calculations)
- Hull loftbooks (part 1 and part 2)
- Shell expansion

Sample CNC Programs

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•	4	•	G162
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•	6	•	M00
•	7	•	G00 X137.70 Y86.60
•	++100	•	M00
•	++9644	•	T21
•	+13830+	•	G41 D21
•	+-9468	•	G261
•	-13830-176	•	N1 M07
•	8	•	G01 X137.70 Y96.60
•	5	•	G01 X137.70 Y1061.00
•	+15366-73	•	G01 X1520.70 Y1061.00
•	6	•	G01 X1520.70 Y114.20
•	7	•	G01 X137.70 Y96.60
•	-71+71	•	M08
•	-500+493-485+9+	•	G260
•	++3902	•	G40 D21
•	+309+309	•	G00 X1674.30 Y89.30
•	+4783+	•	G41 D21
•	+308-309	•	G261
•	+-3833	•	N2 M07
•	-499-506-15-485+	•	G01 X1667.20 Y96.40
•	-4401-56	•	G03 X1617.20 Y145.70 I-48.50 J0.90
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Sample Part Sketch Document



Sample Nesting Map Document

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Sample Excel Spreadsheet (List of Parts Used in a Nesting Map)

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5		01800001	1		00800001	1	248	00700004	1	431	01000002	1	
5		01800004	1		00800001	1		01800003	1	440	00700004	2	
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)	72	01000008	1	165	00900002	1	304	00800001	1	472	02400004	1	
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2		01000007	1		00900002	1		01000003	1	474	02400001	1	
3		01000009	1		00800005	1	323	01000002	1	474	02400002	1	
ł		00900001	1		00800001	1	324	00800002	1	475	02400001	1	
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		01000002	1		01000002	1		01000003	1		01800003	1	
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ŀ	119	01000001	1	230	00800001	1	366	01000001	2	556	00800003	1	
5		01000001	1	230	0080006	1	381	01000002	1	1321	01000001	1	
5		01000002	1		00800001	1		01000002	1		00800001	1	
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3		00800005	1		01000002	2	389	01000002	2		00700002	1	
)		00800003	1		01000001	15	399	01000001	2		00700002	1	
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		01000008	1		01000003	141	411	00700004	2				
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Sample Excel Spreadsheet (List of Nesting Maps)

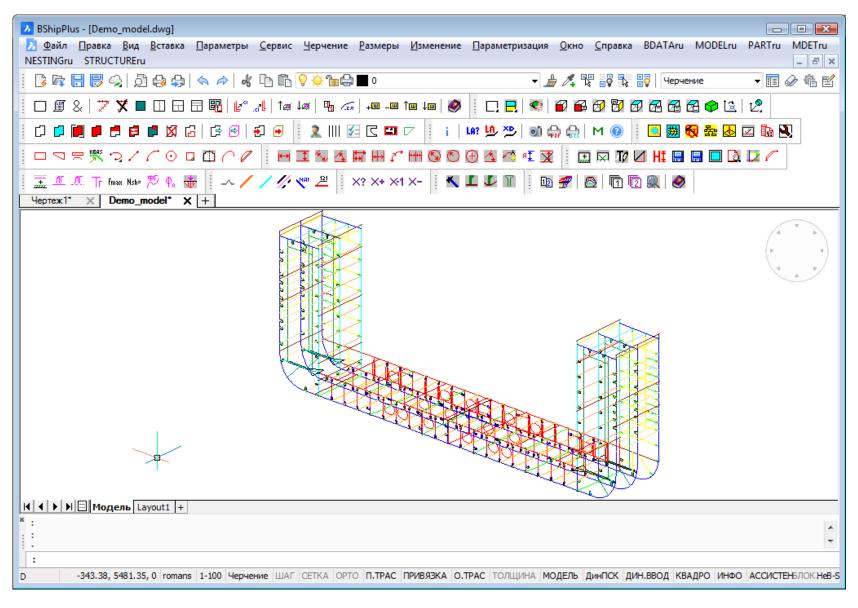
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Length Length 9 1 100400001 4.0 PCB 1600 x 6000 15 0.84 0 0 12 3'00400002 4.0 PCB 1600 x 6000 13 0.68 0 0 13 4'0700002 7.0 PCB 1600 x 6000 13 0.68 0 0 14 2'0'00001 8.0 PCB 1600 x 6000 13 0.68 0 0 0 0</td><td>w Draw F G H J BS103-112.001 Ci 2 Project: BS103 ES103 BS103-112.002 Ci 2 Project: BS103 LIST OF RESTING MAPS BS103-112.002 Ci 4 Launch: %.8 SHEET FLAT BS103-112.002 Ci 4 Launch: %.8 SHEET FLAT BS103-115.01-019 Ci 5 (Created on 25.01.2020)) 6 7 NN Nesting map Thck/Grade Gabarits Onty Nest. Length Quinty Unimps procession 9 1 00400001 4.0 PCB 1600 x 6000 15 0.84 0 0 11 2/0440002 4.0 PCB 1600 x 6000 13 0.68 0 0 0 13 4/0700002 7.0 PCB 1600 x 6000 13 0.68 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>w Draw Fi A B C D E F G H I J K BS103-112.001 C1 1 Project: BS103 BS103 ILIST OF NESTING MAPS BS103-112.002 B 4 Launch: '1,8 SHEET FLAT SHEET FLAT BS103-115.01-019 0 6 (Created on 25.01.2020) 0 6 7 NN Nesting map ThckGrade Gabarits Ontyl Nest. Length Length Curpty Length 9 100400001 4.0 PCB 1600 × 6000 15 0.84 0 0 0 0 11 200400002 4.0 PCB 1600 × 6000 13 0.68 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>w Draw F A B C D E F G H I J K L BS103:112.03-010 C Project: BS103 Crder: test01 LIST OF NESTING MAPS SHEET FLAT BS103:115.01-019 D 6 </td><td>W Draw F A B C D E F G H I J K L M BS103-112.001 BS103-115.01-018 G 2 Project: BS103 LIST OF NE STING MAPS SHEET FLAT SHEET FLAT SHEET FLAT Created on 2.5.01.2020) BS103-115.01-019 B 4 Launch: 1.8 Created on 2.5.01.2020) B 1 Todd0001 4.0 PCB 1600 x 6000 2.6 0.86 0 0 0 0 B 1 Todd0001 4.0 PCB 1600 x 6000 15 0.84 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td< td=""><td>W Draw F A B C D E F G H I J K L M N B5103-112.001 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 D E F G H I J K L M N B5103-115.01-019 D 5 G NN Nesting map Thck/Grade Gabarits Created on 25.01.2020) 6 N N Mass B5103-115.01-019 D 5 NN Nesting map Thck/Grade Gabarits Charght Length Charght Length Charght Daty Mass B5103-115.01-019 D 5 NN Nesting map Thck/Grade Gabarits Charght Length Charght Length Charght Length Charght Daty Daty Daty Daty Daty Daty<!--</td--><td>M Draw F A B C D E F G H J K L M N O BS103-112-001 C 2 Project: BS103 LIST OF NESTING MAPS SHEET FLAT (Created on SHEET FLAT (Created on Condy N N N N N N N N N N N N N N SHEET FLAT (Created on SHEET FLAT (Created on Condy N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N<</td></td></td<></td></tr<>	w Draw F BS103-112.03-101 C 2 Project: BS103 BS103-112.03-101 C 2 Project: BS103 BS103-112.002 B 3 Order: test01 LIST OF NESTI BS103-115.01-019 D 4 Launch: 1,8 (Created on 25.01. BS103-115.01-019 D 4 Launch: 1,8 (Created on 25.01. 6 7 NN Nesting map Thck/Grade Gabarits Onty Nest. 9 - - - - - - - 10 100400001 4.0 PCB 1600 × 6000 26 0.8 11 206400023 4.0 PCB 1600 × 6000 25 0.5 12 300400003 4.0 PCB 1600 × 6000 13 0.8 12 300400002 7.0 PCB 1600 × 6000 25 0.5 13 4 070700003 7.0	w Draw F G H BS103-112.001 G 2 Project: BS103 BS103-112.002 B 4 Launch: 1,8 SHEET FLAT BS103-115.01-018 G 3 Order: test011 LIST OF FRESTING MAPS BS103-115.01-019 D 5 6 (Created on 25.01.2020) 5 B 4 Launch: 1,8 SHEET FLAT SHEET FLAT BS103-115.01-019 D 5 6 0 25.01.2020 B 4 Launch: 1,8 Created on 25.01.2020 25.01.2020 B mm mm mm parts/ratio cut 26.01.2020 B 1 D0400001 4.0 PCB 1600 × 6000 15 0.84 0 11 200400002 4.0 PCB 1600 × 6000 13 0.69 0 12 300400003 8.0 PCB 1600 × 6000 13 0.69 0 13 4050700004	w Draw F A B C D E F G H I BS103-112-001 C 2 Project: BS103 E F G H I BS103-112-002 BS 4 Launch: %1.8 SHEET FLAT SHEET FLAT 25.01.0200) BS103-115.01-019 D 5 (Created on 25.01.0200) 6 7 NN Nesting map Thck/Grade Gabarits Qnty Nest. Length Length 9 1 100400001 4.0 PCB 1600 x 6000 15 0.84 0 0 12 3'00400002 4.0 PCB 1600 x 6000 13 0.68 0 0 13 4'0700002 7.0 PCB 1600 x 6000 13 0.68 0 0 14 2'0'00001 8.0 PCB 1600 x 6000 13 0.68 0 0 0 0	w Draw F G H J BS103-112.001 Ci 2 Project: BS103 ES103 BS103-112.002 Ci 2 Project: BS103 LIST OF RESTING MAPS BS103-112.002 Ci 4 Launch: %.8 SHEET FLAT BS103-112.002 Ci 4 Launch: %.8 SHEET FLAT BS103-115.01-019 Ci 5 (Created on 25.01.2020)) 6 7 NN Nesting map Thck/Grade Gabarits Onty Nest. Length Quinty Unimps procession 9 1 00400001 4.0 PCB 1600 x 6000 15 0.84 0 0 11 2/0440002 4.0 PCB 1600 x 6000 13 0.68 0 0 0 13 4/0700002 7.0 PCB 1600 x 6000 13 0.68 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	w Draw Fi A B C D E F G H I J K BS103-112.001 C1 1 Project: BS103 BS103 ILIST OF NESTING MAPS BS103-112.002 B 4 Launch: '1,8 SHEET FLAT SHEET FLAT BS103-115.01-019 0 6 (Created on 25.01.2020) 0 6 7 NN Nesting map ThckGrade Gabarits Ontyl Nest. Length Length Curpty Length 9 100400001 4.0 PCB 1600 × 6000 15 0.84 0 0 0 0 11 200400002 4.0 PCB 1600 × 6000 13 0.68 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	w Draw F A B C D E F G H I J K L BS103:112.03-010 C Project: BS103 Crder: test01 LIST OF NESTING MAPS SHEET FLAT BS103:115.01-019 D 6	W Draw F A B C D E F G H I J K L M BS103-112.001 BS103-115.01-018 G 2 Project: BS103 LIST OF NE STING MAPS SHEET FLAT SHEET FLAT SHEET FLAT Created on 2.5.01.2020) BS103-115.01-019 B 4 Launch: 1.8 Created on 2.5.01.2020) B 1 Todd0001 4.0 PCB 1600 x 6000 2.6 0.86 0 0 0 0 B 1 Todd0001 4.0 PCB 1600 x 6000 15 0.84 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td< td=""><td>W Draw F A B C D E F G H I J K L M N B5103-112.001 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 D E F G H I J K L M N B5103-115.01-019 D 5 G NN Nesting map Thck/Grade Gabarits Created on 25.01.2020) 6 N N Mass B5103-115.01-019 D 5 NN Nesting map Thck/Grade Gabarits Charght Length Charght Length Charght Daty Mass B5103-115.01-019 D 5 NN Nesting map Thck/Grade Gabarits Charght Length Charght Length Charght Length Charght Daty Daty Daty Daty Daty Daty<!--</td--><td>M Draw F A B C D E F G H J K L M N O BS103-112-001 C 2 Project: BS103 LIST OF NESTING MAPS SHEET FLAT (Created on SHEET FLAT (Created on Condy N N N N N N N N N N N N N N SHEET FLAT (Created on SHEET FLAT (Created on Condy N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N<</td></td></td<>	W Draw F A B C D E F G H I J K L M N B5103-112.001 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 B5103-112.002 D E F G H I J K L M N B5103-115.01-019 D 5 G NN Nesting map Thck/Grade Gabarits Created on 25.01.2020) 6 N N Mass B5103-115.01-019 D 5 NN Nesting map Thck/Grade Gabarits Charght Length Charght Length Charght Daty Mass B5103-115.01-019 D 5 NN Nesting map Thck/Grade Gabarits Charght Length Charght Length Charght Length Charght Daty Daty Daty Daty Daty Daty </td <td>M Draw F A B C D E F G H J K L M N O BS103-112-001 C 2 Project: BS103 LIST OF NESTING MAPS SHEET FLAT (Created on SHEET FLAT (Created on Condy N N N N N N N N N N N N N N SHEET FLAT (Created on SHEET FLAT (Created on Condy N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N<</td>	M Draw F A B C D E F G H J K L M N O BS103-112-001 C 2 Project: BS103 LIST OF NESTING MAPS SHEET FLAT (Created on SHEET FLAT (Created on Condy N N N N N N N N N N N N N N SHEET FLAT (Created on SHEET FLAT (Created on Condy N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N N<

B-Ship+ Modules

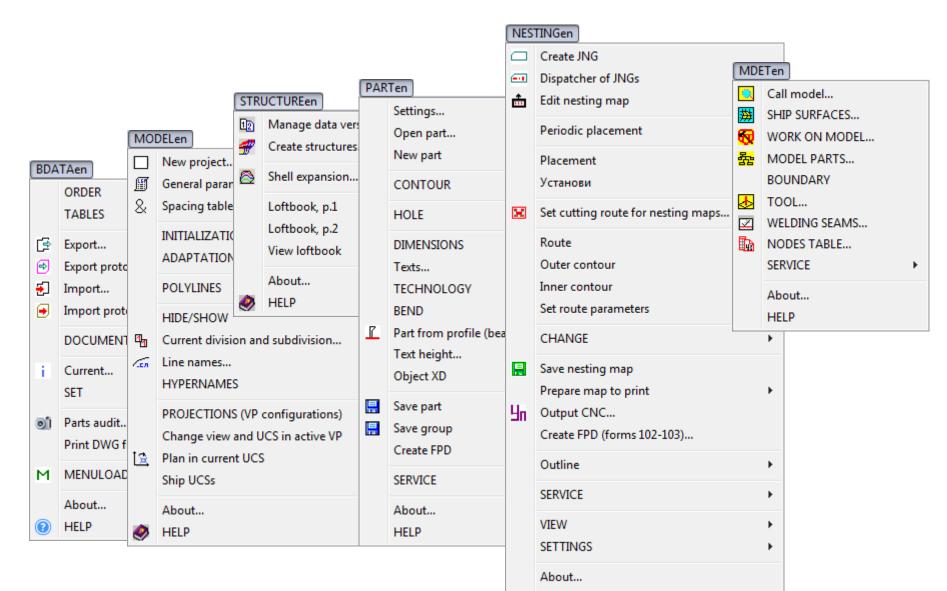
- **Bdata** DB management
- Model preparation of 3D model
- Structure building decks and platforms inside 3D model
- **Part** creation of sheet and profile parts
- Mdet shell development, assembly schemes
- **Nesting** sheet nesting, CNC programs

English and Russian interfaces are available.

Application Window

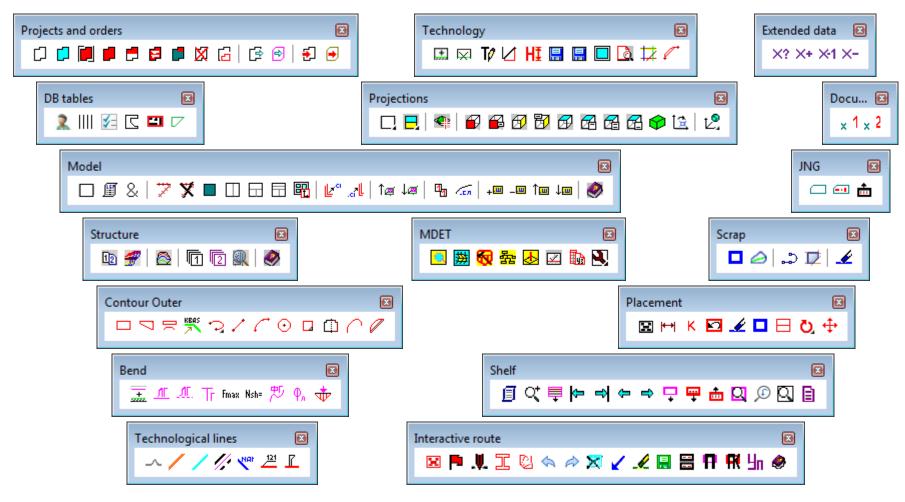


User Interface (Menus Eng)



Nesting help...

User Interface (Toolbars)

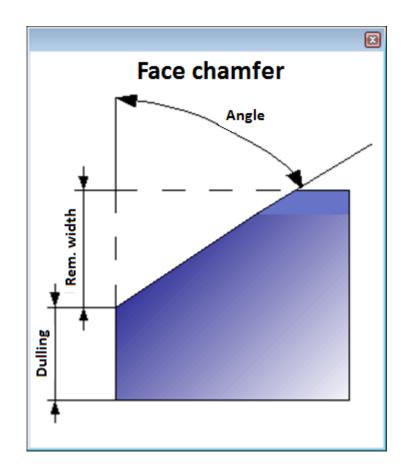


Settings Window (sketch)

Set part attributes											
Technologic	al texts	AO_PS									
User		Bell Jimmy W.N 4823 -									
Main label Vertical Horizontal	Label contents Section, part Draw, part Draw, section, part	Allowance Without hatch Angle With hatch 45 Include allowance in dimensions									
10 XABR	Dimensions on part Part drawing pattern 10 10 10 10 10 10 10 10 10 10										
	Change dimension text height <1.0> Parameters of managemment, editing, saving and marking Manage requests Editing Technology Apply Exit										

Settings Window (chamfer)

AO PS		? 🔀
Chamfers Bevels Allowance		
Chamfer Te	mplate version	Underline
Face 🔻 🧃	1 0 2 0 1+	-2 (2+1)
<pre> fCh <angle></angle></pre>		
Template elements	Values	<u>^</u>
Name	F	
Divider	/	
Symbol	du	E
Angle	<angle></angle>	
Dulling	<dull.></dull.>	
Removal	<rem.></rem.>	-
Input Delete	Clear	Replace
Help Save	Slide	Exit



Bdata: Service Management (Portions of the Entire Ship Order)

- FoxPro DBMS, Bdata module
- Order creation, activation
- Work with tables of users, materials, drawings, parts, nesting maps etc.
- Export & import of orders

Import to order from transit folder									
Current order: BS103_1									
Folder with data to be imported (source)									
D:\TMPN Browse									
Order folder (target)	Order folder (target)								
D:\BSHIP\SAMPLES\BS103	D:\BSHIP\SAMPLES\BS103_1\								
Clean log file import.log	Clean log file import.log								
l									
By coincidence of object n	ames in source and in target:								
DBF table records	Files DWG, SLD, CNC								
SKIP ALWAYS	REPLACE ALWAYS								
Info on contents	TO IMPORT								
Info line									
Exit	<u>С</u> правка								

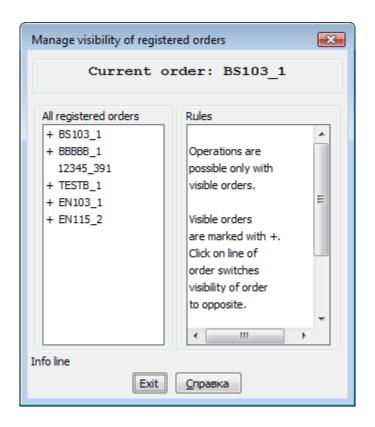
New Order

Create new order									
Current order: BS103_1									
All registered orders	Place for folder of a new order (200):								
12345_391	D:\BSHIP\Samples Browse								
BBBBB_1 BS103_1	Project (8): EN115								
EN103_1									
EN115_2	Project portion No. (3):								
TESTB_1	2								
	Order alias name (6):								
	Тестер								
	Building enterprise:								
	AO PS 🔹								
	Design enterprise (30):								
	КБ 0011								
	Standard (4): GOST Number 191								
	Copy materials from sample order								
Conditions to register orde	r in PRKT_CKB.DBF								
register new order	✓ reg+activate new order								
Order EN115_2 is already reg	gistered								
	ОК Отмена Справка								

Registration, Activation of an Order

Register existing order							
	Current order: BS1	03_1					
All registered orders 12345_391 BBBBB_1	Order folder with path (200):	Browse					
BS103_1	Project (8):	→ Orders					
EN103_1 EN115_2	Project portion No. (3):	Current o	order: BS103_1				
TESTB_1	1 Alias name (6): Z Building enterprise: AO PS Design enterprise (30): DB Standard (4):	Visible registered orders BBBBB_1 BS103_1 EN103_1 EN115_2 TESTB_1	Order folder (200): D:\BSHIP\SAMPLES\BBBBB_1\ Project (8): BBBBB Project portion No. (3): 1 Alias name (6): test02 Building enterprise (60):				
Conditions to register orde			AO PS Design enterprise (30): DB Standard (4): GOST Code TST 191				
		Refresh Act	tivate Cancel Help				

Hiding Inactive Orders



Editing, Renaming, Removing Order

Edit parameters of register	ed order		
	Current orde	er: BS103_1	
Visible registered orders BBBBB_1	Rename registered orders	Current orde	EX.
BS103_1 EN103_1 EN115_2 TESTB_1	Visible registered orders	Delete registered order	
	BBBBB_1 BS103_1		Current order: BS103_1
	EN103_1 EN115_2 TESTB_1	Visible registered orders BBBBB_1 BS103_1 EN103_1 EN115_2 TESTB_1	Order folder (200): D:\BSHIP\SAMPLES\EN103_1\ Project (8): EN103 Project portion No. (3): 1 Alias name (6): Z Building enterprise: AO PS Design enterprise (30): DB Standard (4); GOST Number 191
			ОК Отмена <u>С</u> правка

Order Tables. Users

View and edit users table		X								
Current order: EN103_1										
Current user: 30056										
Order users	Data of selected user									
30056 Korolainen O. Constructor 30336 Karpushkuna N. Technologist	Work number (6)	30056								
	Surname, name (20)	Korolainen O.								
۰	Work position (15)	Constructor								
Info line										
Activate Add new Delete Replace Exit Справка										

Materials Table

		Current order: EN			
laterial type	BULB NONSYMM.				•
Materials in ord	er	Material properties		Profile parameters	s
00304254255	PCA32 14A L=6000 11.05	Standard code (11)	00304254474	Heght (7.2)	200
	PCA32 14B L=6000 13.23 PCA32 18A L=12000 17.41	Grade (25)	PCA32	Sec. area (7.2)	27.36
	PCA32 20A L=12000 21.47	Thickness (7.1)	10	XCS (7.2)	10.2
00304254782 PCA32 24A L=12000 30.42 00309453012 A405 5 L=6000 2.25		Width (7.1)	44	YCS (7.2)	123.5
	A40S 6 L=6000 3.36	Length (7.1)	12000	P1 (7.2)	8
00309453074 A40S 7 L=6000 3.98		Weight of a meter (8.3)	21.47	P2 (7.2)	0
	A40S 8 L=6000 4.58 A40S 9 L=6000 5.52	Material rule (16)	5521-93	P3 (7.2)	30
00309453aa1/	A40S 10 L=6000 6.76	Sortament rule (16)	21937-76	P4 (7.2)	0
		Select profile	•	H1 (7.2)	15
•	III	Profile No. (11)	20A	H2 (7.2)	160

Draws Table

View and edit draw properties table		— ×-
Current	order: EN103_1	
Current dr	aw: EN103-112-002	
Draws in order	Properties of selected draw	
EN103-112-001	Building region (2)	3
EN103-112-002 EN103-112.03-010	Block (6)	3
	Section (6, no spaces)	131
	Draw (5-25) EN103-112.03-010	
	Full draw name (55):	
	Bottom section 98+300110+300 fr.	
	KDRAW:	2
	Techset (15)	
	Construction group code (3)	1
	Launch No. (5):	1
	Parts DWG prefix (4):	131
	Number of parts	1415
	Number of positions	903
	Number of parts DWG	903
Activate Add new	Delete Replace Exit	<u>С</u> правка

Parts List Table (Specification)

View and edit part properties table						×
	Current or	der: EN1	03_1			
Draw EN103-112-002						•
Filter			Search by positio	on No.		
Fresh draw parts list () all	🔘 sheet 🛛 🔘	prof	Number (7):			Find
Draw parts (positions)	Main properties	of selected part				
-Select position-	Position (4)	2	Quantity (4)	3	Free
*1 [Parts10]1 PCD32 10x400x1200 31.09 *2 [Parts16]3 PCD32 16x300x450 9.1	Symmetric (4)	0	Side	▼ W.N	30056	Nested
_101 [Beam 14B]3 PCA32 14B L=0 0	Full name (80)	Part s16				
_102 [Part]1 PCA32 24A L=0 0	Material type	SHEET FLAT				•
	Material code	00524350420	PCD32 16 2000	x8000 7.85		•
	Thickness	16	Width	300	Length	450
	Profile No.		KDRAW	3	KDRAWS	0
	Grade	PCD32	Bending	Cutting	Crystall	•
	🔲 Use auxiliary p	roperties				
	Section	Γ		Sub	section (2)	
	Node (100)	Ī		Noc	les qnty (2)	0
	Inserted draw n	umber (20)				
	Techset (15)		Ord	er doc code	(5)	0
	Spec, division c	ode	- Spe	c, subdivisio	n code	
	Technology					
	Mounting code		Cover code (3)	Container	(8)
	-Weight load					
	Load article co	de		Mass (9.2)	-	9.1
	Length (7.1)	Ļ	V	Vidth (7.1)	ļ	
	X c.m. (10.2)	0	Y c.m. (10.2)	0	Z c.m. (10.2)	0
						Σ
2010002.dwg				dwg		L.
+ BricsCAD Add ne	w position		place		_	
Addite	w position	Ke	piace			20 min
Help Delet	e position	F	xit			\searrow
	e position		.Alt			

Sheet Nesting Maps Table

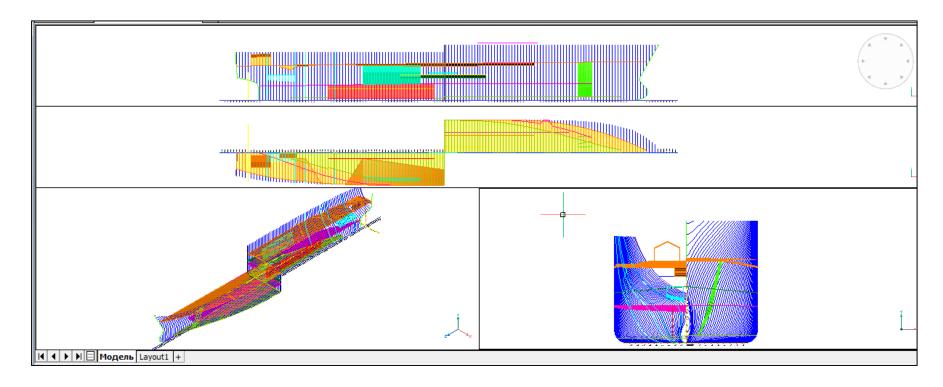
View and edit nesting map properties						×
	Current orde	r: EN103	3_33			
Nesting maps in order _ 31 00700001 52 1 PCB 7x1600x6000 (0) 0 0 0 _ 31 00700002 52 1 PCB 7x1600x6000 (0) 0 0 0 _ 31 00700003 52 1 PCB 7x1600x6000 (0) 0 0 0 _ 31 00700004 52 1 PCB 7x1600x6000 (1) 0 0 0 _ 31 00700005 52 1 PCB 7x1600x6000 (2) 0 0 0	Properties of selecter Map name (8) Launch No. (5) Thickness	d nesting map 00800005 31 8 PCB	Multiplicity Cutting type (3) Width	1 52 1600	Scraps qnty Parts qnty Length	4 14 6000
_ 31 00800001 52 1 PCB 8x1600x6000 (0) 0 0 0 _ 31 00800002 52 1 PCB 8x1600x6000 (0) 0 0 0 _ 31 00800003 52 1 PCB 8x1600x6000 (0) 0 0 0 _ 31 00800004 52 1 PCB 8x1600x6000 (0) 0 0 0 _ 31 00800005 52 1 PCB 8x1600x6000 (4) 0 0 0 _ 31 01000006 52 1 PCB 10x1600x6000 (2) 0 0 0 _ 37 01000007 52 1 PCB 10x1600x6000 (2) 0 0 0	Material grade (25) PCB Route generated Nesting ratio (4.2) Cut length (7) Mark lines length (7) Pierce gnty (3) W.N. of nesting author (6) W.N. of route author (6)		NC generated 0.42 Cut kerf halfwidth (3.1) 0 Cut jumps length (7) 0 Mark jumps length (7) 0 Qnty of marks-on (3) 30336 Nesting date (8) 0 Route date (8)		th (7) gth (7) on (3)	1.5 0 0 27.09.20
	W.N. of NC author (NC date (8)		
Help Parts and scraps	Rename	Edit ;	properties	Delete		Exit

Sheet Scraps Table

View and edit scraps table				×
Scraps table	e: D:\BSHIP\O	TXOD.DBF		
List of scraps	Scrap taken FROM	1	Scrap sent TO	
BS103_1 00800005_3 PCB 8x522x552 13 *** [_0] *** A	Project FROM (8)	BS103	Project TO (8)	EN103
BS103_1 00800005_4 PCB 8x721x1600 14 "DWG" [_0] "" BS103_1 01000015_2 PCB 10x1600x2356 69 "" [_0] ""	Portion FROM (3)	1	Portion TO (3)	33
BS103_1 01000016_1 PCB 10x755x1340 81 ** [_0] **	Alias FROM (6)	test01	Alias TO (6)	test3e
BS103_1 01000016_2 PCB 10x605x1480 80 ** [_0] ** BS103_1 01000016_3 PCB 10x1600x3825 79 ** [EN103_33] *test3e	Launch FROM (5)	11	Launch TO (5)	31
BS103_101000016_4 PCB 10x755x1340 143 *** [_0] ***	Nmap FROM (8)	01000016	Nmap TO (8)	01000006
BS103_1 01000017_1 PCB 10x575x1450 83 ** [_0] ** BS103_1 01000017_2 PCB 10x1360x1600 82 ** [_0] ** EN103_33 00700004_1 PCB 7x511x1129 3 ** [_0] **	Properties of selec	ted scrap		
EN103_33 00700004_1 PCB 7x511x1129 8 " [_0] "	Grade (25)	PCB	Scrap name (12)	01000016_3
EN103_33 00700005_1 PCB 7x714x1037 1 ** [_0] **	Thickness (5.1)	10	Scrap No. (12)	
EN103_33 00700005_2 PCB 7x1600x4540 2 ** [_0] ** EN103_33 00800005_1 PCB 8x641x1777 4 ** [_0] **	XN (8.2)	2175	Scrap DWG (3)	
EN103_33 00800005_2 PCB 8x570x1040 5 ** [_0] **	YN (8.2)	0		
EN103_33 00800005_3 PCB 8x522x552 6 *** [F1_22] *** EN103_33 00800005_4 PCB 8x721x1600 7 *** [_0] ***	Gab. X (7.1)	1600	Scrap ID (6)	79
EN103_33 01000006_1 PCB 10x600x610 93 ** [_0] **	Gab. Y (7.1)	3825	Date (8)	16.06.21
FN103_33.01000006_2.PCB_10x1600x5390_92 ** [_0] ** >	Profile (10)		Work No. (6)	30336
01000016_3 (ID=79).				
Help Add new	Delete	Replace	2	Exit

Model & Structure Modules

- Spacing tables
- Preparation of geometrical model, building decks and platforms
- Loftbook, shell expansion



New Model (Folder & General Data)

Create new project 💽	
Projects folder: D:\BSHIP\Projects	
Existing projects:	
71144	
92053	
New project folder name (8), Only digits and latin letters:	
42971	
L	1
Create Exit Help	

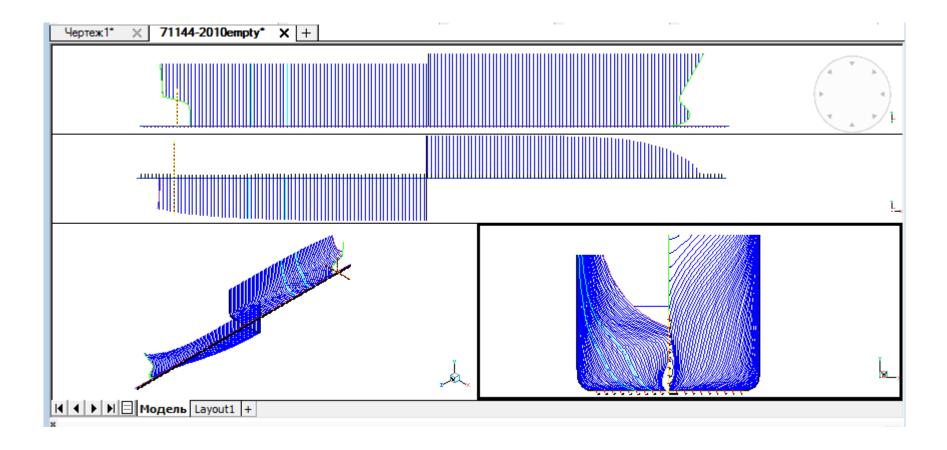
General project parameters								
Current project: BS103 Select project								
Ship type	er							
Designer	Greenbla	Greenblatt DB						
IMAX 127.00 10.50								
LMAX		н		19.50				
LPP	100.00	т		5.40				
В	6.35	1.1						
BMAX	11.43	TM		5.20				
Direction of	Layer n	ame						
abscissae axis	sternfra	sternframe _BT0		1_				
from aft to fore	stemfra	stemframeBTO		0_0_2_				
from fore to aft	t transon	transom _TRANSOM_						
Save Exit Help								

Spacing Tables

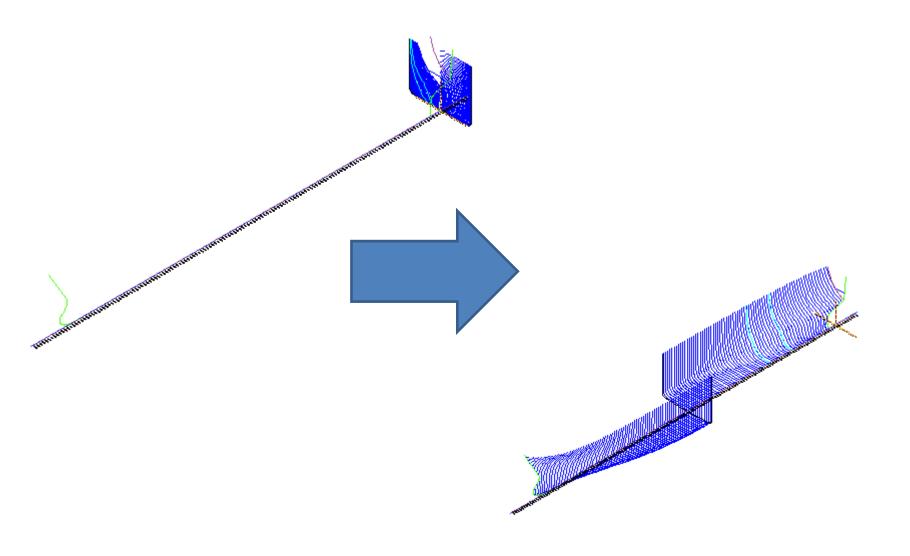
Values of distances between frames, buttocks, waterlines

🕹 Spacing Tabl	es						
	Cu	Choose p	roject				
Frames Wate	erlines Buttock	s Design section	ns				
No. of group	ps: 2	Start fra	ame absciss	a, mm -1480	.0		
Group to ed no. of group	1 🚔 N	beg.(n) -15	= _	spacing, mm Apply to list	450.0 Remove	Get from ta ine nur and ad coordin	mbers
Group (n)	N beg.(n)	X, mm	Spacing	N end (n+1)	X, mm	x	0
1	-15	-1480.0	450.0	30	18770.0		
2	30	18770.0	335.0	70	32170.0	N	
						\$	
						R	un
	s	Save	Cance		Help		

Views & Viewports Creation



Model Lines Adaptation



Naming Lines

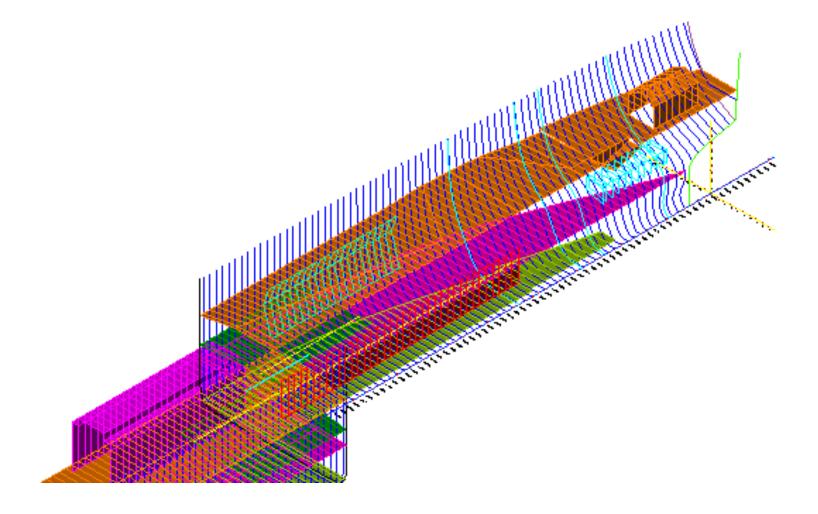
Naming model lines	, pr.71144		×
LAYER NAME _UD23\$100_0_0_	TO BE FORMED:		
Туре	UD	1 2 3 BT A BEAM A SL	
Number Addition	23 100	WL SLG UD SST BOTTOM WKEEL MB TTB T	
Partition Subpartition	0	Add to list 3	
	Accept Cance	el Help	

Structure Module

Managing projects and data version	ns 💌								
Current project <71144>, current version <00>									
Mode	Project, version								
Create new project	Select version								
Change current project	00 05 10 15 20 25 01 06 11 16 21 26 02 07 12 17 22 25								
Create new version	02 07 12 17 22 27 03 08 13 18 23 28 04 09 14 19 24 29								
Change current version	• III •								
Remove current version	Structure module								
Run Ex	it Help								

STRUCTUR	E Module. Project	<en103>, versio</en103>	n <0>	×
Mode		Designations		
Oata	🔘 Full run	Frame FR	Addition	\$
	Количе	ство категорий:	1	
Category	Decks			•
	Total no. of structu	res: 1		
-Select to a		-	Add all	
"UD" "vp.0	0" "Upper deck"			
			Add	
			Clean	
	Selected for calculat	tion: 0	-	
			Delete	
			Clean	
Delete u	nused layers		1	
	Names file	Next > Cano	el Help	
Data ani	alysis string			

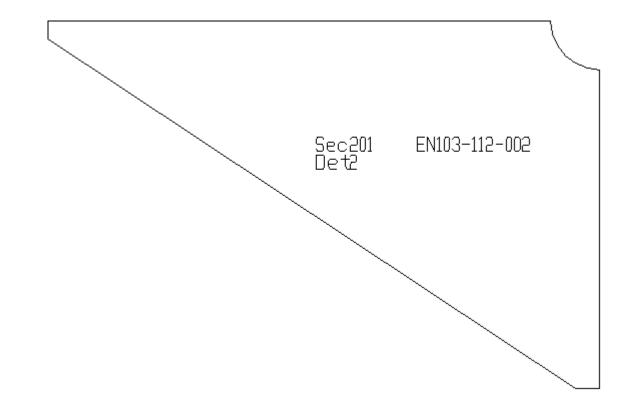
Building Decks & Platforms Surfaces in Model



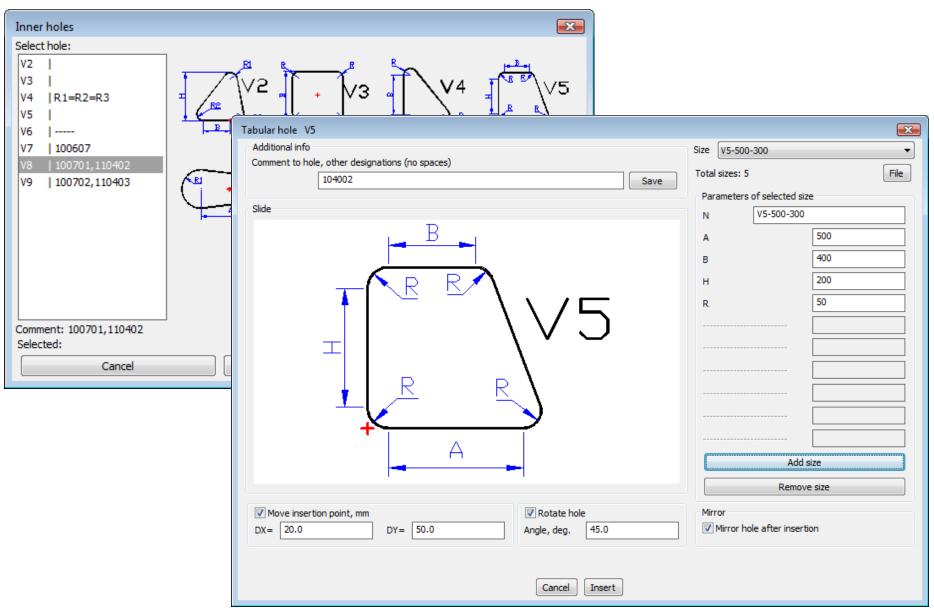
Part Module. Creation of Parts

- Creation of part contours in accordance with a specific structure of part drawing
- Adding inscriptions, allowances, chamfers
- Holes and notches insertion
- Generation of TNC/FPD documents (technological and norming document with part sketch) using the form approved by the shipyard

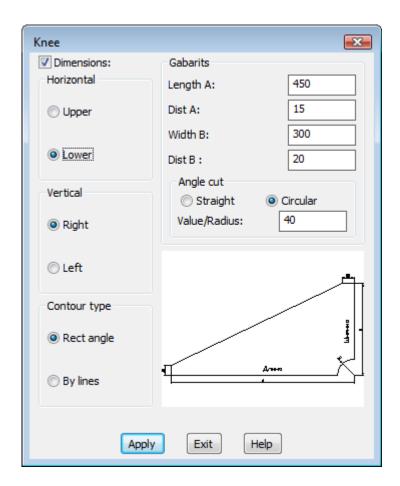
Part Contours. Tools for Outer Contour



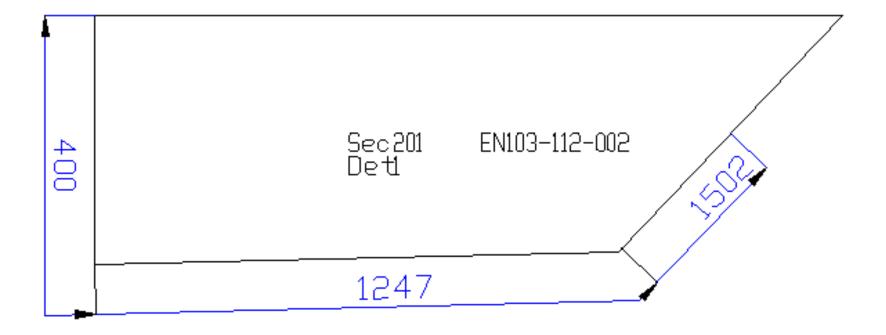
Holes, Notches



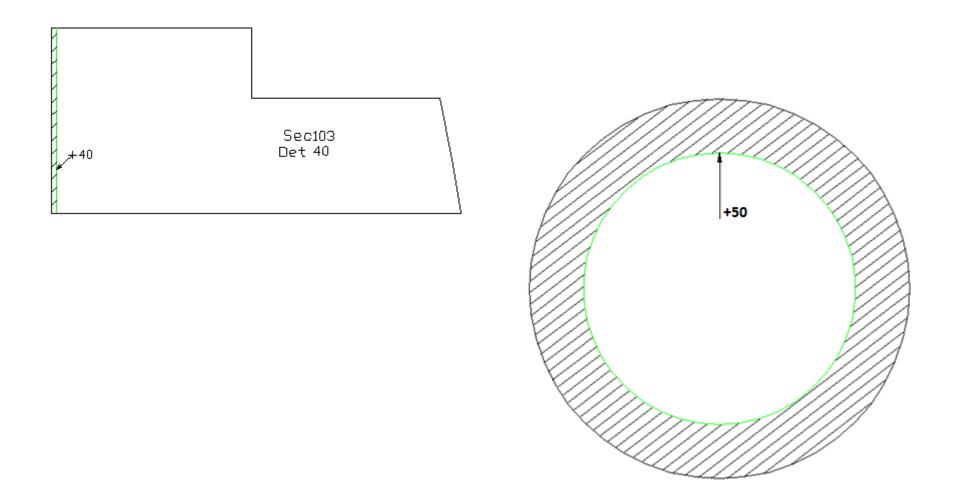
Standard Parts



Specific Dimensioning



Allowance



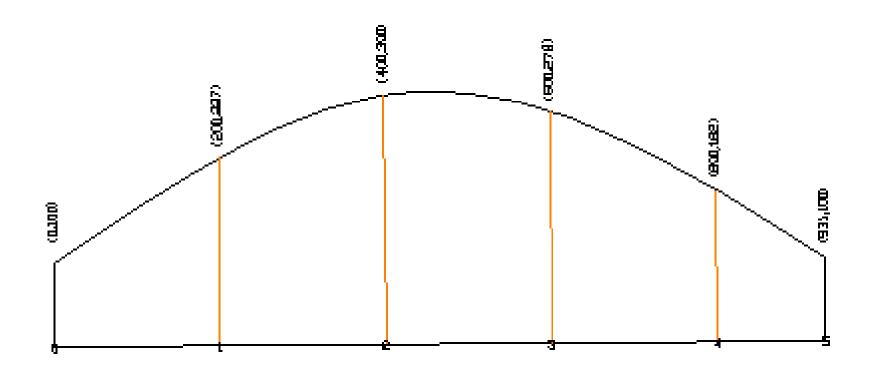
Inscriptions

Technological texts	? 💌
Inscription type	
Orientation -	
List of texts	
TOP BOTTOM CL TO SIDE AFT FORE PS SS	Toutheight and
Text to add	Text height, mm
	11
Underscore	To check
Add Delete	Exit Apply

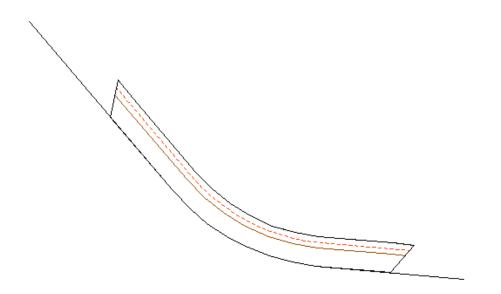
Bending, Flange

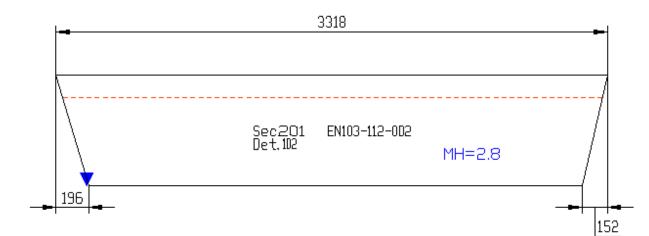
Create flange					×		
Flange type	Parameters			Saved			
Bend with knuckle	Part thickness	s	8	H200/20-25/60			
Bend by radius	Width	н	100	H100/20/40 H130/0/45			
Bend radius 16	Dist from p. P1	S1	20	H100/20-0/40			
Flange over edge	Dist from p. P2	S2	20	H80/0/45			
Flange under edge	Angle incl	F1	40				
Front	Angle incl	F2	40	4 III	•		
V Text	range me				_		
Flange slide							
S1 P1			FZ P	2			
Delete Add Exit Apply							

Bending. Template for Controlling Form



Profile (Beam) Part Sketch





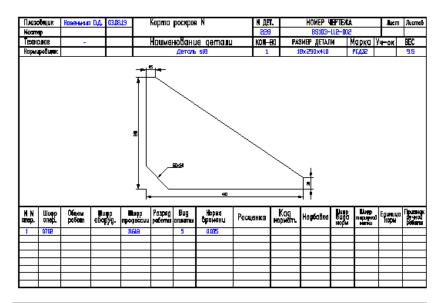
Editing Parts

	art(s)									×
		roiect	<en103></en103>	Alias n	ame <7>	Portion < 1>				
		03-112-			- 201	• User	Voro	lainen (о. W.N	30056 -
			-002	566	- 201	- User	KOLO.	Tarmen	5. W.N	30030 +
	ew DW Pos	G Name		Qnty	Grade	Thck	Width	Longth	Drofile	Mass
									Profile	
*52 *52	1	PART		1	PCD32 PCD32	10.0 16.0	400 300	1200 450		31.09 9.10
52	101	BEAM		3	PCA32	9.0	500	400	14B	5.10
52	102	PART		1	PCA32	12.0			24A	
•										4
	os4.D	WG files - 2 .	In DB - 2 p	os.		III			Mirror prototype	
	os4.D	WG files - 2 .	In DB - 2 p	OS.				[
			In DB - 2 p						Nes	e st. Map
	os 4 . D Del.ge		In DB - 2 p	os. Prot. DWG		III Prot. POS	E	xit		2
Qnty po	Del.ge	eom		Prot. DWG		Prot. POS	E		Nes	e st. Map
Qnty po	Del.ge T OF	POSITIC)	Prot. DWG	E OR DE	Prot. POS			Apply	e st. Map
Qnty po	Del.ge T OF 101	eom	DNS TO V	Prot. DWG	E OR DE	Prot. POS		xit	Apply	e st. Map Help
Qnty po	Del.ge T OF 101	POSITIC BEAM :	DNS TO V	Prot. DWG	E OR DE	Prot. POS		xit	Apply	e st. Map Help
Qnty po	Del.ge T OF 101	POSITIC BEAM :	DNS TO V	Prot. DWG	E OR DE	Prot. POS		xit	Apply	e st. Map Help
Qnty po	Del.ge T OF 101	POSITIC BEAM :	DNS TO V	Prot. DWG	E OR DE	Prot. POS		xit	Apply	e st. Map Help
Qnty po	Del.ge T OF 101	POSITIC BEAM :	ONS TO V 14B 516	Prot. DWG	E OR DE	Prot. POS	ES\E	xit	Apply	e st. Map Help
Qnty po	Del.ge T OF 101	POSITIC BEAM :	ONS TO V 14B 516	Prot. DWG	E OR DE	Prot. POS	ES\E	xit	Apply	e st. Map Help

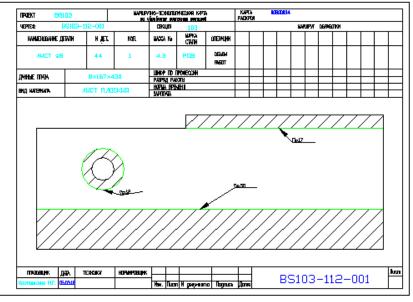
Creating TNC/FPD with Part Sketches

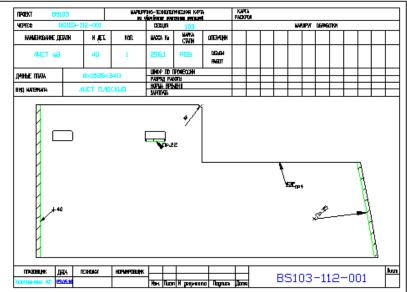
Create (or print) FPD (THK) for pa	art sketches
Current project <bs1< th=""><th>103> Alias name <test01> Portion < 1></test01></th></bs1<>	103> Alias name <test01> Portion < 1></test01>
User:	Bell Jimmy W.N 4823 🗸
Drawing:	ВS103-112-001 Сек - 103 •
Info on ready FPDs	
Quant. entr 247	DWG files - 249 Quant. doc 2
Parameters for output read To TNK folder of order To printer Plot configuration file .pc3 Default Windows System P	 Part contour Contour line weight No scaling texts Scale texts
Layout orientation Nume	eration of FPD sheets and paper size Settings of FPD generation
Portrait Pape	er sheet size: 297x210 Vo FPD scaling
Landscape FPD =	sheet No, 🔽 Delete part label
	e positions group for FPDs e group
	Apply Exit Help

Drawings of TNCs for Parts



IPODIT E	903			K-EHII	onedaar kapt Taxiid terdar		KAPI PADO	7) 701								
VERTER	BS102-	-112001		CENTRA	103					840	М	06796	лж			
HUHLEHOBAUHE	, JEWIH	H "ET	Kar	WCCA Ka	EURICA CTATIN	UTERALIM										Ī
ИНСТ К	8	41	1		PCB	usjan Rhatt										
anne mar		BK25DK3	83	UNKP ID Papag Pa	IPONECCINI Rath											Ē
BND NATERNAM		инст пло	CHANA	HARMA BET							-					F
				Ass			таг, к е		 -			\rangle				
																 _
ITROELIJK Kaoramoeko H.P.	ДДА. DOJOSJE	TEOREST	HORMFORDER		n H paganan			-	 BS	510	3-	-11	2.	-00	71	Jı





Export of Parts to Another Project

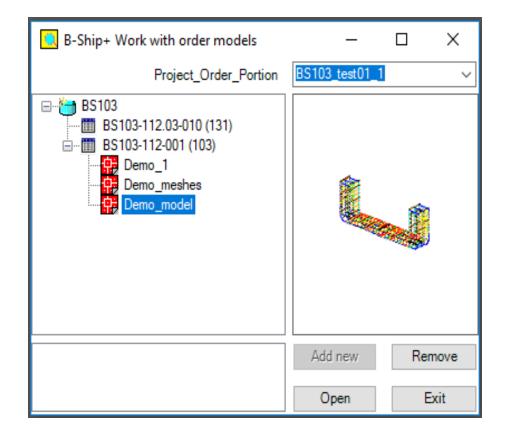
Select draws and parts for export	. ENI	02.1
Current order	: ENI	.03_1
Select draw (specification)		
EN103-112-001		Export options
EN103-112-002		✓ DBF specification
EN103-112.03-010		✓ DWG geometry
		JWG FPD
		✓ DBF technology
Mark parts of the selected draw	_	Desitions is down
*40 [PLATE s8]1 PCB 8x1526x3375 256.22	_	Positions in draw: 245
*41 [PLATE s8]1 PCB 8x250x329 4.58	=	Mark all
*42 [PLATE s18]1 PCB 18x709x709 55.76		Unmark all
*43 [PLATE s18]1 PCB 18x630x1695 146.85		Unmark all
*44 [PLATE s8]1 PCB 8x1279x2858 187.98		
*45 [PLATE s8]1 PCB 8x1560x2859 259.28		Mark in the scope
*46 [PLATE s8]1 PCB 8x938x1757 77.48		from 120 up to 220
*47 [PLATE s8]1 PCB 8x1215x1757 123.66		
*60 [BRACKET s9] 1 PCB 9x961x1380 92.88		
v *61 [BRACKET s9]1 PCB 9x540x967 27.62		Unmark in the scope
v *62 [SHELF s10]1 PCB 10x240x668 6.08		fam
v *63 [BRACKET s9]1 PCB 9x543x537 18.46		from up to
v *64 [PLANK s10] 1 PCB 10x100x438 3.44 v *65 [BRACKET s9] 1 PCB 9x460x537 17.02		T = = = = 111 = =
*66 [PLANK s10]1 PCB 10x100x430 3.38		To position
v *67 [BRACKET s9]1 PCB 10x100x430 3.38		
*68 [PLANK s10]1 PCB 10x100x430 3.38		
*69 [BRACKET s9]1 PCB 10x100x450 5.58		
*70 [PLANK s10] 1 PCB 10x100x430 3.38		
*71 [BRACKET s9]1 PCB 9x481x537 17.82		
*72 [PLANK s10]1 PCB 10x100x430 3.38		
*73 [BRACKET s9]1 PCB 9x488x537 18.08		Export
*74 [PLANK s10]1 PCB 10x100x430 3.38	_	marked
	•	
Click on part line to switch mark (yes/no) to opposite one	r	·
Marked 47 positions		
Exit	авка	
	abrd	

The Mdet Module

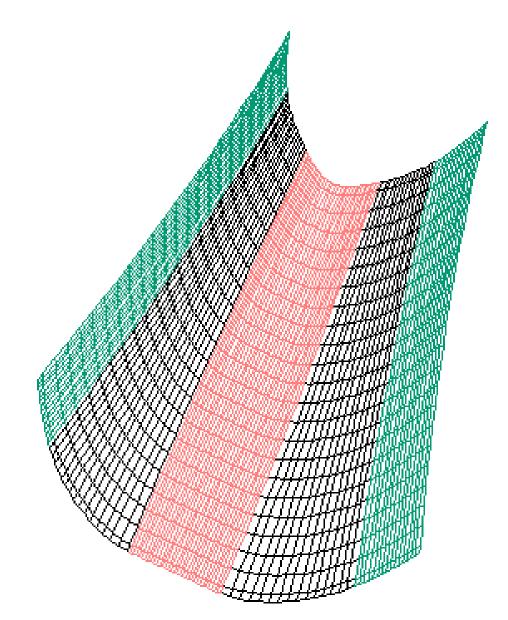
- Handling models (dwg files of ship hull block or section)
- Creation of parts geometry in 3D model
- Additional builds for plaz (loft) needs
- Calculation of bending data
- Shell sheets development
- Work with node tables and welding seams

Models in the Project

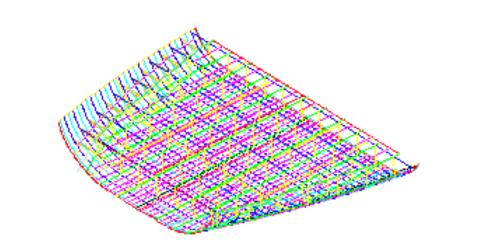
Dwg models are being connected with a drawing document (specification)

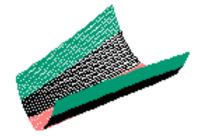


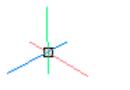
Meshes for Hull Shell Plates

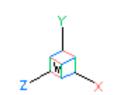


Models on Screen

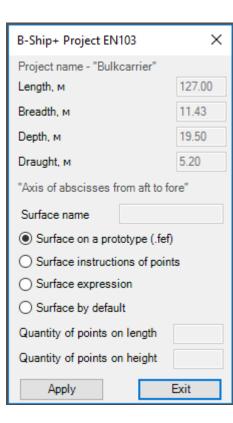


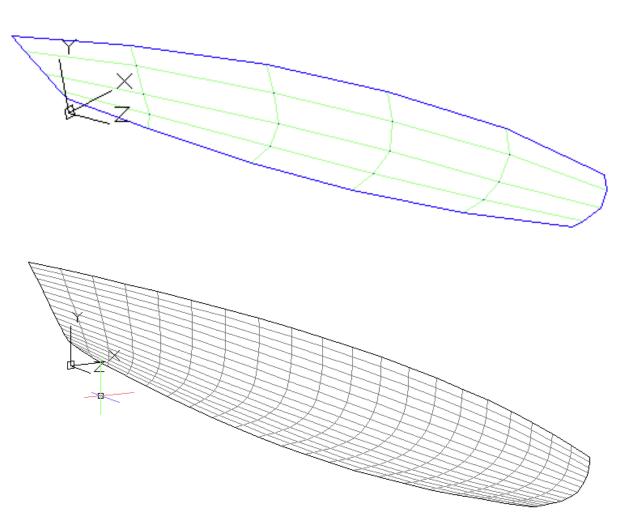






Creating Mesh Surfaces for Shell





Import of Surfaces from FreeSHIP

🔀 Выберите FEF-(файл		×
<u>П</u> апка:	MODEL - C	Э 🕅 🗙 🖆 Вид	🕶 Сервис 👻
(Fa	Имя	Дата изменения	Тип
~	FREE!ship demo 3.fef	26.01.2018 17:49	Файл "FEF"
Журнал	FREE!ship demo 3_H&O&Hollen&F_L.fef	26.01.2018 17:42	Файл "FEF"
R	FREE!ship demo 4_RvrsDemo.fef	28.01.2018 21:05	Файл "FEF"
	Tug 25m_modT.fef	14.12.2017 9:32	Файл "FEF"
Документ	Новая модель.fef	03.02.2018 10:40	Файл "FEF"
Избранное			
Рабочий стол			
1	<		
FTP			
1	-		
<u>V</u>	Имя <u>ф</u> айла:		 <u>О</u>ткрыть
Buzzsaw	<u>Т</u> ип файла: •.fef		• Отмена

Shell Plate Development

器 B-Ship+ (C:\BSHIP\SAMPLES\EN1	03_1\)	_		×
Project_Order_Portion	EN103_Z_1			~
● All ○ Sheet ○ Profile ○ Solid ○	Bend Skelet	ton 🔿 Sk	eleton D	rawing
EN103-112-001 (103)		Ħ		
····· 야. 0046 ···· 야. 0047		PLATE si	-	
Objects of a detail ☐ Mesh	Quantity:1 Grade :ЛI		оский	
 Inner holes Notch Uncut holes Bending equipment Chamfer on an edge Lines of stiffeners Drilling lines Marking lines 	Grade : PCE Thickness Part dimens L = 709.0 M Weight of a p Work numbe Record date Detail type	:18.0 ions: м В= part : er :3033 е :27	709.0 мм 55.76 кг 36	
	Remove	Save		Exit

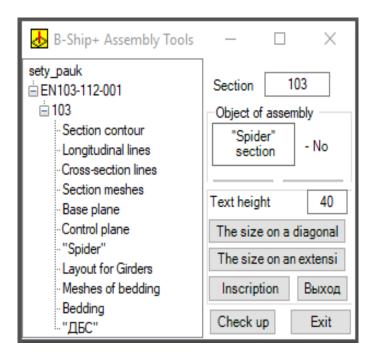
Bending Tools

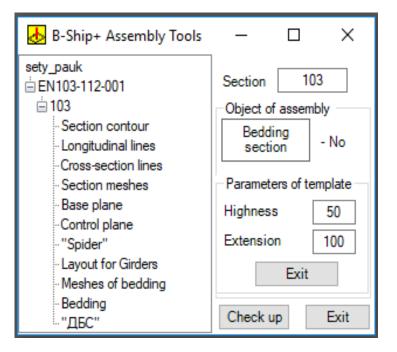
器 B-Ship+ (C:\BSHIP\SAMPLES)	EN103_1\)	- 0	×
Project_Order_Port	ion EN103_Z_1		~
● All ○ Sheet ○ Profile ○ Sol	id 🔵 Bend Skelet	ton 🔿 Skele	ton Drawing
Parametres of bending equipment			
On a normal \checkmark		17ma	
Truncation plane		\mathcal{L}	≶
Automatically		TH -	
○ To specify of 3 points		\ll	
Definition of templates	Dulling a ter	nplate	150
Select trace	Marking rad	ius	5
O Quantity	Template re	start-up	100
Cross-section templates 2	Distance fro	m an edge	50
Longitudinal templates 1	Distance to	CL	500
🗌 beveler Heigh	100 t	Length	200
Lines of bending	The base	size	200
The skeleton definition Skeleton against a direction of a	thickness of she		Apply
Skeleton in a direction of a thick	ness of shee		Cancel

Bending Skeleton Drawing

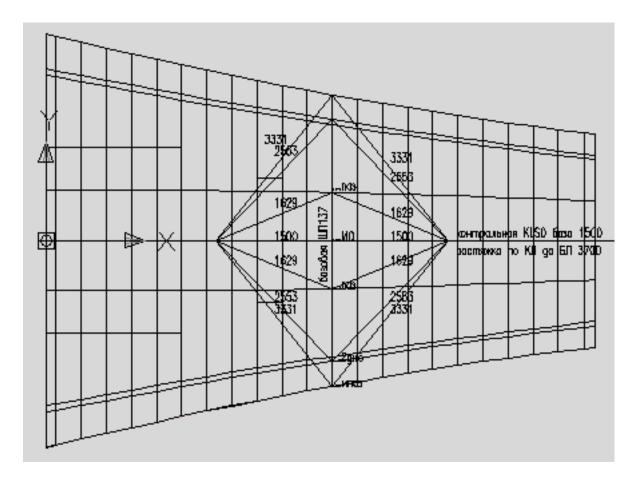
器 B-Ship+ (C:\B	SHIP\SAMPLES\EN103_1\)	—		×
Pro	oject_Order_Portion EN10	3_Z_1		~
◯ All ◯ Sheet (⊖Profile ⊖Solid ⊖Ben	d Skeleton 🤅	Skeleton	Drawing
EN103 EN103-1 EN103-1 EN103-1 EN103-1 EN103-1 0040				
	Posi	tion in the dr	-	
-Creation of a framew	ork and stamp of the drawin	" PLAT g of bending		
Building enterpris	e /	AO PS		
Draw	EN103-112-001	Section	10	3
The drawing name	e Bendin	g equipment	det, 40	
Arrangement The horizontal The vertical	Document kind Format: A0 Multiplicity: A0	✓ Sheet n✓ In total s		1
	Creation		Exit	

Assembly Tools

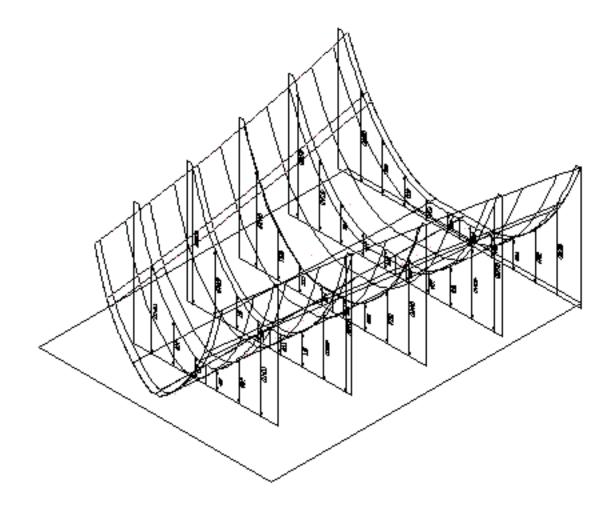




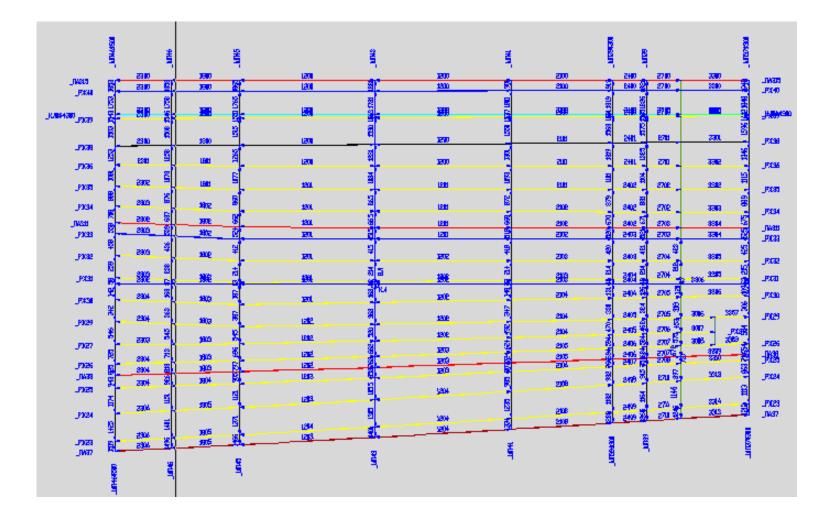
Section Marking Drawing



Bending Templates Positioning Data



Layout for Girders (Longitudinal and Crossing)



Export of Models to Another Project

Select models for export		—
	Current order: BS103_1	
Select draw		
BS103-112-001		Export options
BS103-112-002 BS103-112.03-010		✓ DBF
BS103-112.03-010 BS103-115.01-018		
BS103-115.01-019		
		✓ DWG
Mark models of the selecte	d draw	
Demo_1		Models in draw: 3
v Demo_meshes		Mark all
v Demo_model		Unmark all
		To export marked
		To export marked
Click on model line to switch	n mark (yes/no) to opposite one	
Marked 2 models		
	Ехіт <u>С</u> правка	

Nesting Module. Nesting Maps, Scraps Handling

- Groups of joint nesting
- Automatic nesting of sheets
- Interactive nesting of sheets
- Defining cut route, output of CNC programs
- Forming TNC/FPD for nesting maps
- Nesting spreadsheets (tables)
- Nesting of scraps and getting CNC programs

Joint Nesting Groups (JNG)

Create joint nesting group (JNG)		—
	Current order: BS103_1	
Total JNG: 2	# for new JN	IG: 6
Draws BS103-112.03-010 BS103-115.01-018 BS103-115.01-019	Material grades РСВ РСД32	Unused thicknesses 6 (pos:2 pc:4) 7 (pos:11 pc:14) 9 (pos:3 pc:3) 10 (pos:2 pc:2) 12 (pos:72 pc:128) 16 (pos:2 pc:2)
End of draws selection Selected: BS103-112-002 BS103-112-001 Starting nesting map name (4+4): 0070 + 0070	Selected: Grade PCB Between parts (0.0-40.0 mm): 10.0	Selected: Thickness 7 Cutting kerf halfwidth (0.0-2.0) 0.0
Selected thickness: 7. Check other data and go to	Select sheets, scraps Cancel Help	

JNG Dispatcher

Dispatcher of joint nesting groups		
Current order: BS103_1		Launch: 1
Joint nesting groups	Parameters of selecte	ed JNG
4 PCB s8 (5) 00800007	JNG #	4
5 PCB s7 (3) 00700005	Number of parts	5
	Summary area	6.5
	Material grade	PCB
	Thickness	8
	Cutting type	52
	Material code	11111111
	Nmap name	00800007
	Shelf DWG	
	Data	23.10.19
•	Personal #	51494
Delete shelf Parts include		
New JNG Delete JNG	S Nesting	Renesting Exit

Selecting Sheets (Scraps) for JNG

Select sheets, scraps for JNG				e ×
JNG: 6 Material grad Scraps table: D:\BSHIP\otxod.dbf			Thickness:	7
Sheets			001_1 PCB 7x311x66 002_1 PCB 7x457x20	
		scr BS103_1 00700	002_2 PCB 7x330x77	2 120 "DWG"
Selected for JNG]	Parameters		
scr BS103_1 00700002_1 PCB 7x4	57x2033 121 "DWG" [457	
		Length (5)	2033	
		Number (3)	1	
		DWG (3)	DWG	
		Up	De	lete
•		Down	Rep	lace
		View scrap DWG		
Help				
Cancel				
Choose parts for	JNG			

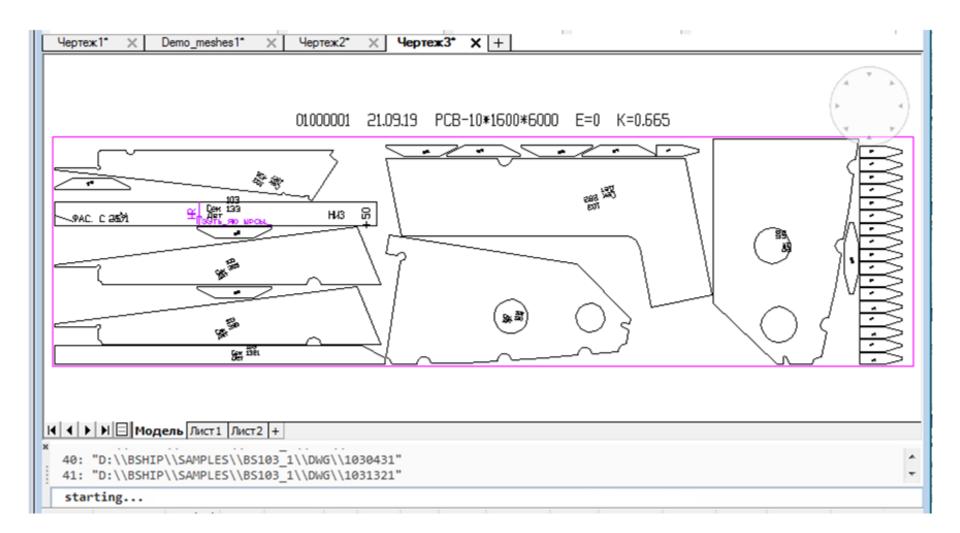
Selecting Parts for JNG

Select parts for new JNG					
Current order: BS103_1					
JNG: 6 Material grade: PCB Thickness: 7 scr BS103_1 00700002_1 PCB 7x457x2033 121 "DV					
To nest on sheets, scraps:					
Parts and multiplicities Included to JNG 1030240 (1000x4550) 1 1030247 (1006x4442) 1 1030436 (480x522) 2 1030404 (345x302) 2 1030554 (275x453) 1 1030460 (227x461) 1 1030555 (175x436) 1 All > <					
Free 5 positions. Included to JNG 6 positions JNG and exit JNG and nesting Cancel Help					

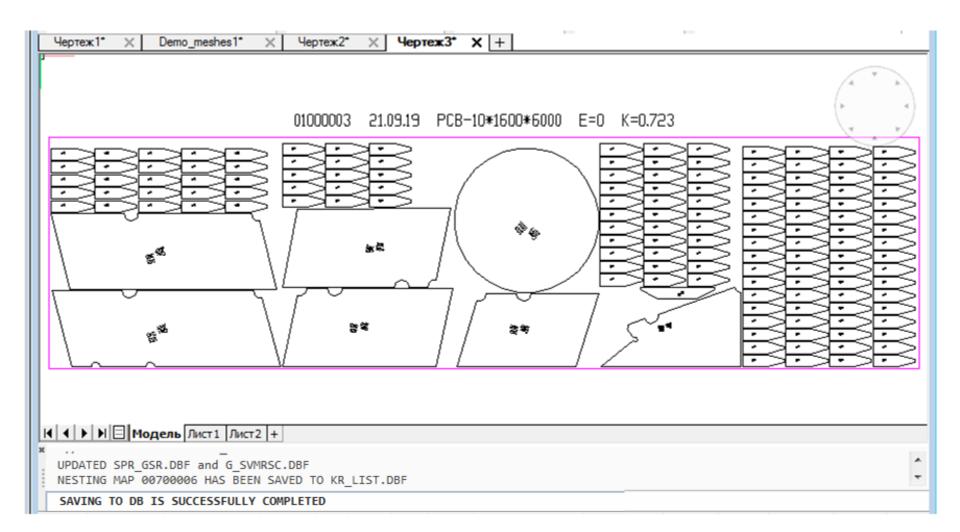
Selecting Nesting Type for JNG (Automatic or Interactive)



Automatic Nesting Process (1)



Automatic Nesting Process (2)



Results of Automatic Nesting

Number of parts nestedNumber of nesting

mapsNumber of partsleft unnested

Automatic nesting rezult

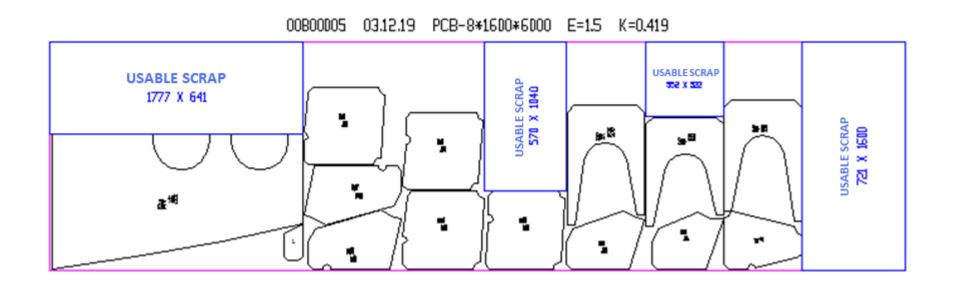
PARTS NESTED

NESTING MAPS CREATED

LEFT UNNESTED

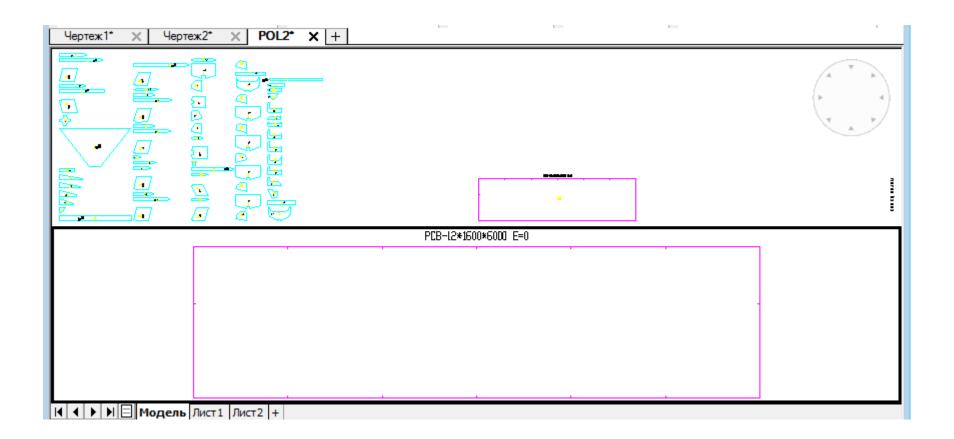
O

Automatic Definition of Scraps

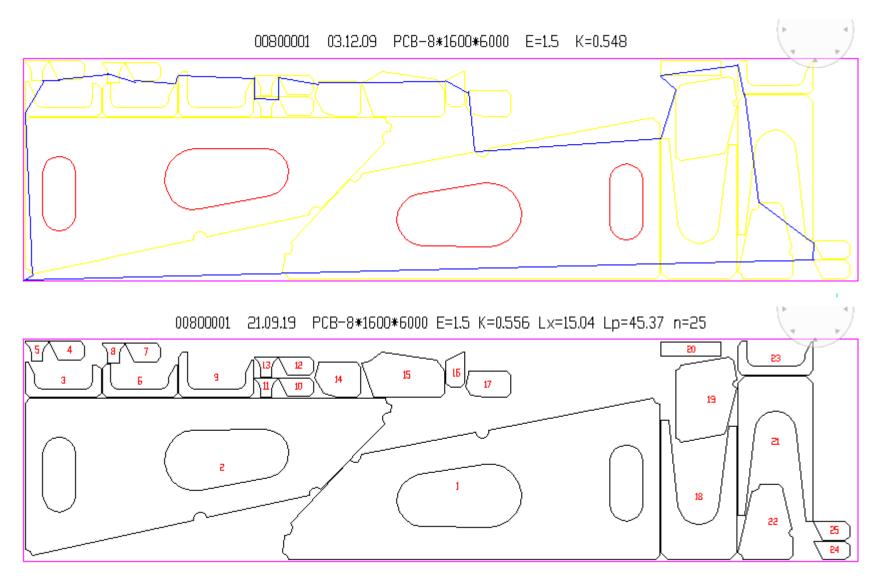


Scraps (in blue) are being defined in the free area of the nesting map (minimal dimensions are 300x300 mm).

Interactive Nesting



Setting cutting kerf route



Generation of CNC Program

Create CNC program Current project <en103> Alias name <test01> Portion <1></test01></en103>									
			Veresov G. W.N 51944						
	P NC R	NM	Ratio	H/K	Grade	Thck.	Gabarit		
+	-	00400001	0.860	0.0	PCB	4.0	1600x60 🔺		
+	-	00400002	0.840	0.0	PCB	4.0	1600x60		
+	-	00400003	0.750	0.0	PCB	4.0	1600x60		
+	-	00700006	0.400	1.5	PCB	7.0	457x20;		
+	-	00700002	0.680	1.5	PCB	7.0	1600x60		
+	-	00700003	0.650	1.5	PCB	7.0	1600x60 😑		
+	-	00700004	0.690	1.5	PCB	7.0	1600x60		
+	-	00800006	0.690			8.0	721x16		
+	* *	00800001	0.560	1.5	PCB	8.0	1600x60		
+	-	00800002	0.760	1.5	PCB	8.0	1600x60		
+	-	00800003	0.790	1.5	PCB	8.0	1600x60		
+	-	00800004	0.810	1.5	PCB	8.0	1600x60 🔻		
AICNC CNC Exit LIST OF NESTING MAPS TO CREATE CNC (1) 00400002									
Clear the whole list To delete double-click on the line									

CNC Program

- 3
- B\$103.00800001 19/09/21 22-55-41 6000.0 1600.0 8.0
- 4
- 17
- +705+404
- 7
- -78+63
- -492+398-477-87+
- ++10541
- +309+309
- +25588+
- +419-495+485-15+
- -85-504
- -424-834-96-476+
- -4583-4705
 - -820-453-349-337+
- -7372-1576
- 18
- -579+388-477-87+
- 17
- -369-591+102-475+
- -11592-2478
- 8
- 5
- -492+11527
- 6
- 7
- ++100
- +309-309
- +4812+
- +309+309
- ++1742
- -309+309
- -321+
- 18
- +-1145
- -585-585-585+-
- -3000+
- -585+585++585-

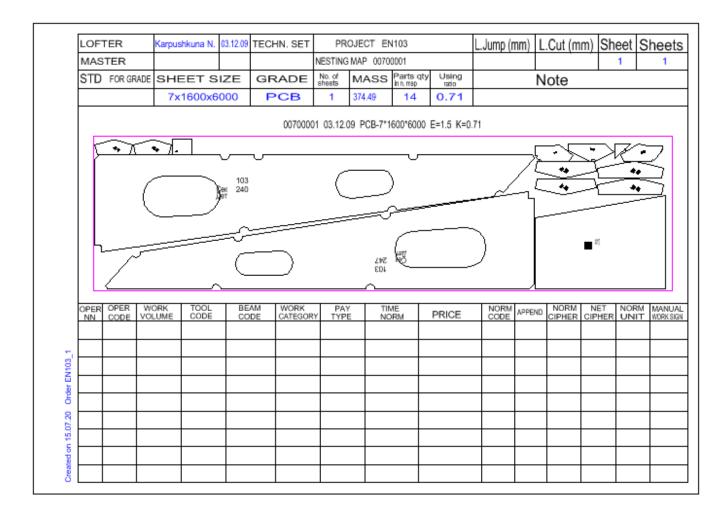
.....

- ++404
- 17

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• -456+911

Generation of TNC Document for Nesting Map



Export of Nesting Maps to Another Project

Select nesting maps for export						
Current order: BS103_1						
Scraps table:	D:	\BSHIP\OTXOD.DBF				
Mark nesting maps _1 00400001 52 1 PCB 4x1600x6000 (0) 0 0 0 v _1 00400003 52 1 PCB 4x1600x6000 (0) 0 0 0 _1 00400003 52 1 PCB 7x1600x6000 (2) 0 0 v _1 00700002 52 1 PCB 7x1600x6000 (0) 0 0 0 _1 00700003 52 1 PCB 7x1600x6000 (0) 0 0 0 v _1 00700004 52 1 PCB 7x1600x6000 (0) 0 0 0 v _1 00700006 52 1 PCB 7x457x2033 (0) 0 0 0 v *1 00800001 52 1 PCB 8x1600x6000 (1) 45370 15040 2 _1 00800002 52 1 PCB 8x1600x6000 (1) 0 0 0 _1 00800003 52 1 PCB 8x1600x6000 (1) 0 0 0 _1 00800005 52 1 PCB 8x1600x6000 (1) 0 0 0 _1 00800005 52 1 PCB 8x1600x6000 (1) 0 0 0 _1 00800005 52 1 PCB 8x1600x6000 (1) 0 0 0 _1 00900001 52 1 PCB 9x1600x6000 (1) 0 0 0 _1 00900001 52 1 PCB 9x1600x6000 (2) 0 0 0 _1 00900002 52 1 PCB 9x1600x6000 (2) 0 0 0 _1 00900003 52 1 PCB 9x1600x6000 (2) 0 0 0 _1 00900003 52 1 PCB 9x1600x6000 (2) 0 0 0 _1 00900004 52 1 PCB 9x1600x6000 (2) 0 0 0 _1 00900005 52 1 PCB 10x1600x6000 (0) 0 0 0 _1 01000001 52 1 PCB 10x1600x6000 (0) 0 0 0 _1 01000002 52 1 PCB 10x1600x6000 (0) 0 0 0 _1 01000002 52 1 PCB 10x1600x6000 (0) 0 0 0 _1 01000002 52 1 PCB 10x1600x6000 (0) 0 0 0 _2 010000000 52 1 PCB 10x1600x6000 (0) 0 0 0	4	Properties of selected map Nesting map name: 01000001 Sheet: 10x1600x6000 Launch: 1 Material grade: PCB Cutting route: no Parts quantity: 34	LUC CNC DBF scraps DWG scraps 49 all k all			
Exit <u>С</u> правка						

Graphical Kernel for B-Ship+

- B-Ship+ for its running requires preliminary installation of one of supported graphical kernels:
- BricsCAD v20, v21, ...
- AutoCAD (2019 or other version).
- Parallel work in different graphical kernels is possible.

Free Trial Copy of B-Ship+

- To get free trial copy of B-Ship+ order its installer with pointing out graphical kernel/kernels. After installation get code for approved term.
- Installer with support of different versions of graphical kernel is possible (for example: BricsCAD v21 + AutoCAD 2019, and so on).
- Send a request to npol50@yandex.ru

BSB (BricsCAD OEM) Version

 OEM version for B-Ship+ is under construction. In such a case customer has no need to buy BricsCAD, because all the necessary graphical kernel functions are integrated into B-Ship+.

BSB = BricsCAD Solution Build (OEM)

Web Page of the BShipPlus http://poleshchuk.spb.ru/cad/2016/bshipe.htm

B-Ship+ CAD/CAM System

(http://poleshchuk.spb.ru/cad/2016/bshipe.htm)

The **B-Ship+** computer-aided system for design and technological preparation of the shipbuilding and machine-building production was developed by the group of physical bodies (reg. No. 2016615527). B-Ship+ works under Windows, inside the <u>BricsCAD</u> v17-v19 system (Pro or Platinum) environment and functionally intergrated with the systems <u>Ritm-Ship</u>, <u>R-Ship+</u> requiring AutoCAD, as well as with the <u>N-Ship+</u> system working inside nanoCAD Plus. BricsCAD is significally cheaper than AutoCAD and retains possibility of licenses unlimited in time.

Contacts

Saint Petersburg, Russian Federation Phone: +7 921 7561226, email: <u>npol50@vandex.ru</u>

B-Ship+ is a third-party appplication on the Bricsys site (Russian).

Application Field

The **B-Ship+** computer-aided system is aimed for technical preparation in shipbuilding production up to forming documents for yard workshops. It can also be used in shiprepair and machine-building. Interface language are Russian and English. Adaptation to other languages is possible. The operating system is Windows.

System components

The B-Ship+ system consists of the following modules:

· Bdata, Model, Structure, Part, Mdet, Nesting.

Software modules run using the data base connecting graphical and textual data. Work with several projects/orders is possible.

Sample illustrations

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User Documentation

See <u>http://poleshchuk.spb.ru/cad/2016/bshipe.htm</u> PDF docs are downloadable:

- Administrator's guide
- Bdata
- Model
- Structure
- Part
- Mdet
- Nesting

Technical support is provided during agreed period.

Bricsys Application Store

- B-Ship+ for BricsCAD is available in the Bricsys application store:
- https://www.bricsys.com/applications/a/?bship-a1402-al2424

Contacts



- InterCAD Co.
- http://icad.spb.ru

- SP Poleshchuk N.N.
- npol50@yandex.ru

http://poleshchuk.spb.ru/cad/eng.html Thank you for your attention!