Designing SAR vessels for SSRS

K9 - K12 - K15

Task

- 9m, 12m and 15m designs to replace current fleet as they reach end of life
- Composite construction
- Waterjet propulsion
- Improve on crew operation and comfort, speed, range and fuel economy
- Optimal seakeeping and handling at speed
- To set a new standard, initial build cost less important than a long and trouble free service life
- Don´t mind if boats are pretty and attract sponsors

Design - Concept - Philosophy

- Keep it simple and down to basics, follow your intuition, avoid layer on layer of «styling»

- Use signature hull design with double curvature v-bottom, water jets inset in transom, and plumb stem
- S-curve sheer line for high freeboard fore body and low freeboard aft body with continous fender
- Optimal seakeeping and handling at normal speeds take priority over top speed on flat water

- Long double curvature superstructure with pronounced shoulder line for a continuous curve including airbox
- Keep weight out of ends and low down whenever possible to make for better performance in a seaway
- Helm arrangement close to centreline for better crew communication and sightlines

Design - General Arrangement

- Helm and Nav. station side by side close to centreline with displays and controls within arms reach
- Jockey and Bucket seats by Ullman Dynamics for ride and space concerns

- Singe level «walk around» deck arrangement
- Superstructure with front and side windows at an angle, and aft extension for protected area at entrance
- Equipment on deck and superstructure arranged for lower wind resistance
- Low rescue zone/ rescue platform integrated into aft deck

- Integrated in hull stem fender

K12-SAR

- Hull shape an iteration of a line of designs dating back to the «Daughter Craft» K1000 «Munin» (1999), K11, and later designs like the 60 knot Interceptor K13 (14m)

K12-SAR

- Kongsberg S25 water jets chosen for performance and small diameter as required by hull shape
- Engines moved forward and integrated fuel tank on Centre Of Buoyancy for weight concentration
- Superstructure is a self-contained unit «floating» on hull and deck for noise reduction
- Wheelhouse with 2+1 workstations on a raised platform, separate 4th crew seat, bench for pax or stretcher
- Storage room for equipment down below with access from hatch forward on superstructure
- Large rescue platform (with towing hook) integrated into deck above water jets
- Observe placement of life raft

- Thanks to SSRS, Swedeship, Ø-Varvet and all consultants for building to target weight and trim!

K12-SAR

- As built boat


SJÖRÄDDNING SAR


SAR SJÖRÄDDNING


06
16

K9-SAR

- Hull shape an iteration of designs dating back to the Norsafe FRB K655 «Mako» (1998), and later designs like the K840 leisure yacht and Harding FRB «Stinger 760»

8,4m Yacht Tender

Umoe Schat-Harding Stinger 760
IMO / SOLAS Fast Rescue Boat

K9-SAR

- Hull adapted to fit same waterjet as K12 (single)
- Superstructure is partly enclosed for crew protection and comfort
- 2+1 Ullman jockey crew seats on raised floor, 2 protected seats for passengers
- Rescue equipment stowage below foredeck with spine board attached to underside of hatch
- Sprayhood with integrated steps on centreline and for boarding
- Engine in console forward of integrated fuel tanks for optimal weight distribution
- Transom rescue area with purchase for lifting persons onboard fitted to roof extension
- Towing hook integrated in aft A-frame

K9-SAR

- As built boat

K15-SAR

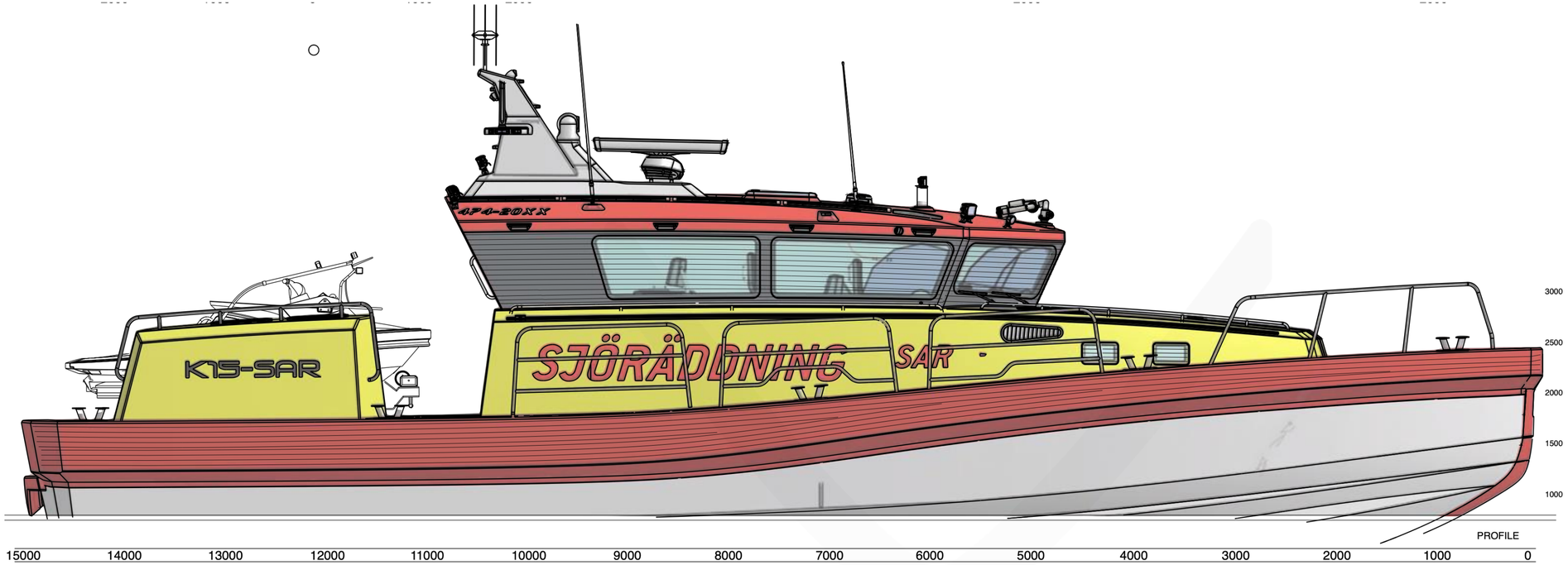
- Design reference

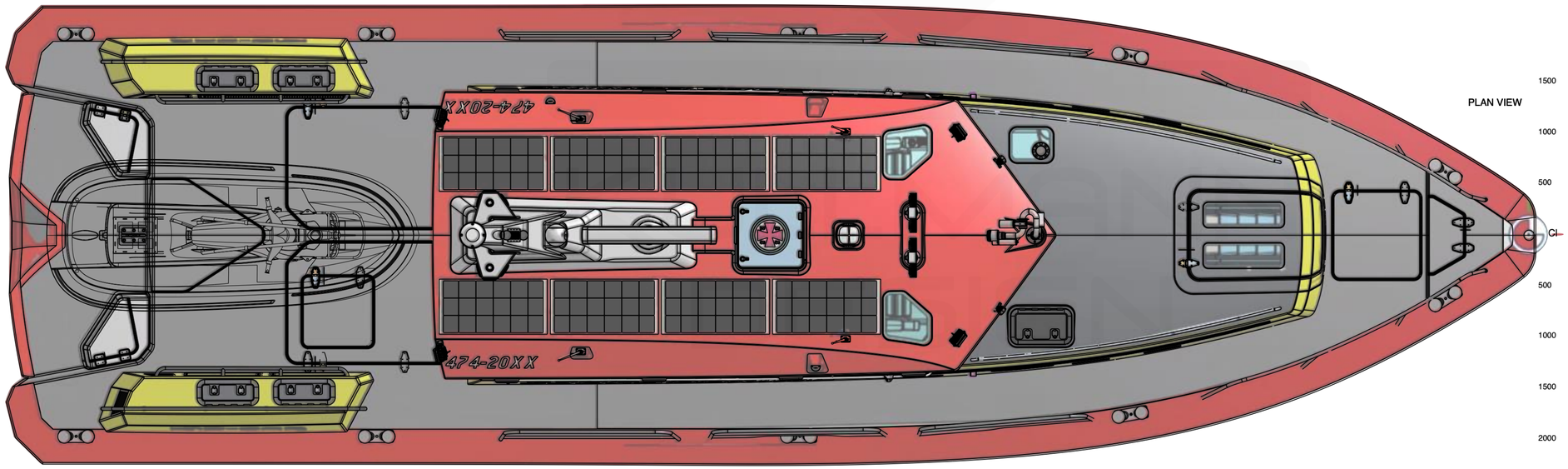
K12-SAR

K13-FIC

K15-SAR

- «Big brother/ sister» to K12
- High performance hull featuring asymmetric water jets. Option for later hybrid propulsion
- Superstructure laminated to deck and hull structure for a 100% watertight, safe and rigid structure
- Wheelhouse arrangement new development with all stations on a single «floating floor»
- New style interior arrangement with an on centreline passageway with entrance aft of helm station
- A combined staircase and basket stretcher lift in transport room
- An integrated (and removable) custom cradle on aft deck for a daughter craft option





See specification for detail and materials a.o.
See equipment manufacturers instructions for assembly a.o.
See builders detail plans for interior and exterior detail.
Spars, fittings, equipment, marking a.o. detail see specification.
Interior, helm and seating arrangement detailing see specification.

Dimensions at loaded trim

LOA: 14,99 m
Length (ex fender): 14,76 m
LWL: 13,96 m
BMAX: 4,51 m
Beam (ex fender): 4,13 m
Draft Hull at DWL: 0,81 m
LCB at DWL: 8,68 m
Air draft: 5,08 m
Height (transport): 4,22 m

Note: Profile shown at zero trim

Capacity: 25 persons
Crew: 5 persons
Freeboard stem: 1,64 m
Freeboard stern: 0,93 m
DSPL loaded at DWL: 16300 kgs
Propulsion: Twin diesel/ waterjet
Propulsion: Twin hybrid/ waterjet
Cruising speed: 25-35 knots
Max speed: 40-45 knots

YARD

SWEDESHIP

ö-varvet

Issue	250225	7
Issue	250128	6
Issue wip (F)	240527	5
-	-	4
Issue wip (D)	240128	3
Issue wip (C)	231122	2
Issue wip (B)	231114	1
Issue preliminary (A)	231023	0
CORRECTION	DATE	NO

CLIENT

SJÖRÄDDNINGS SÄLLSKAPET

DESIGN

15m SAR Vessel

DWGNO K15-01-081-002-7 | ISSUED 250225

ITEM

GENERAL ARRANGEMENT

EXTERIOR ARRANGEMENT

SCALE DWG 1-1 | SCALE PDF 1-25 (A0) | SHEET 1 of 1

Unless otherwise specified dimensions in mm.Tolerances see specification

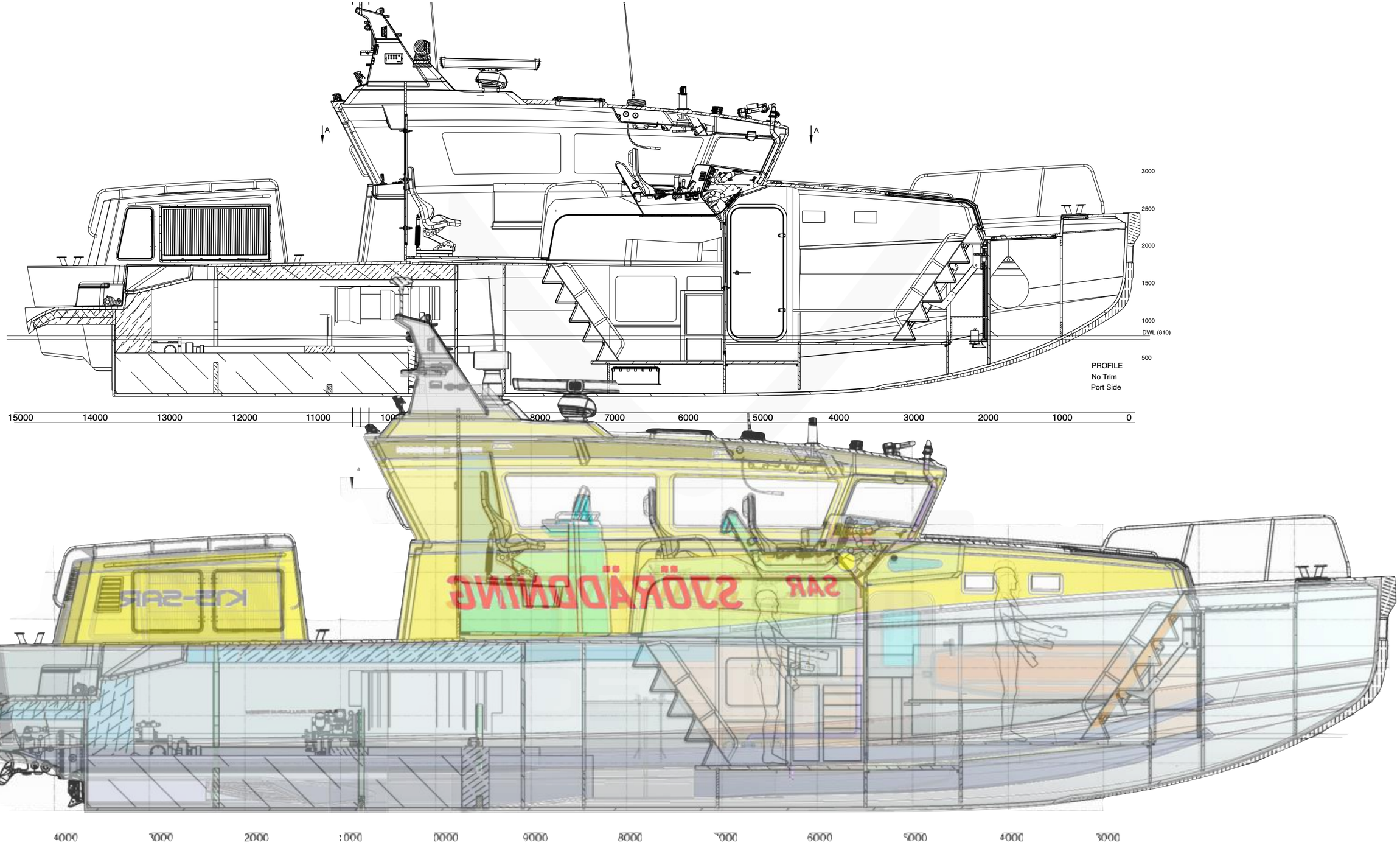
BKD CODE K15–SAR-201 231018 Preliminary wip (11-A)

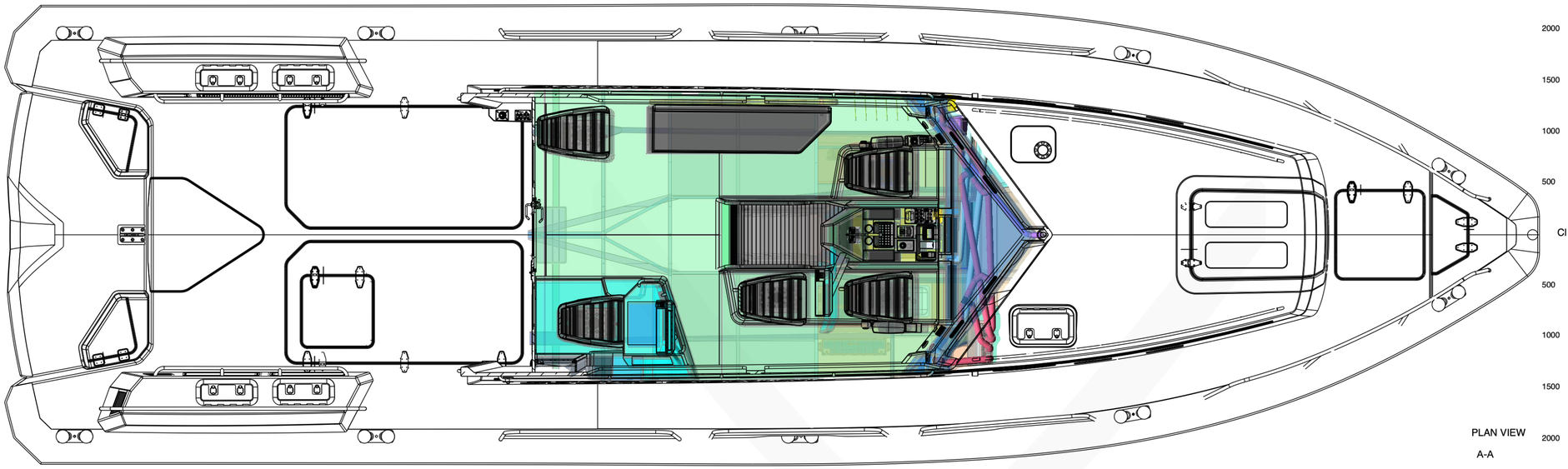
DSG.NO. 2302 K14-SSRS | PREL BK | DRN BK | SIGN BK

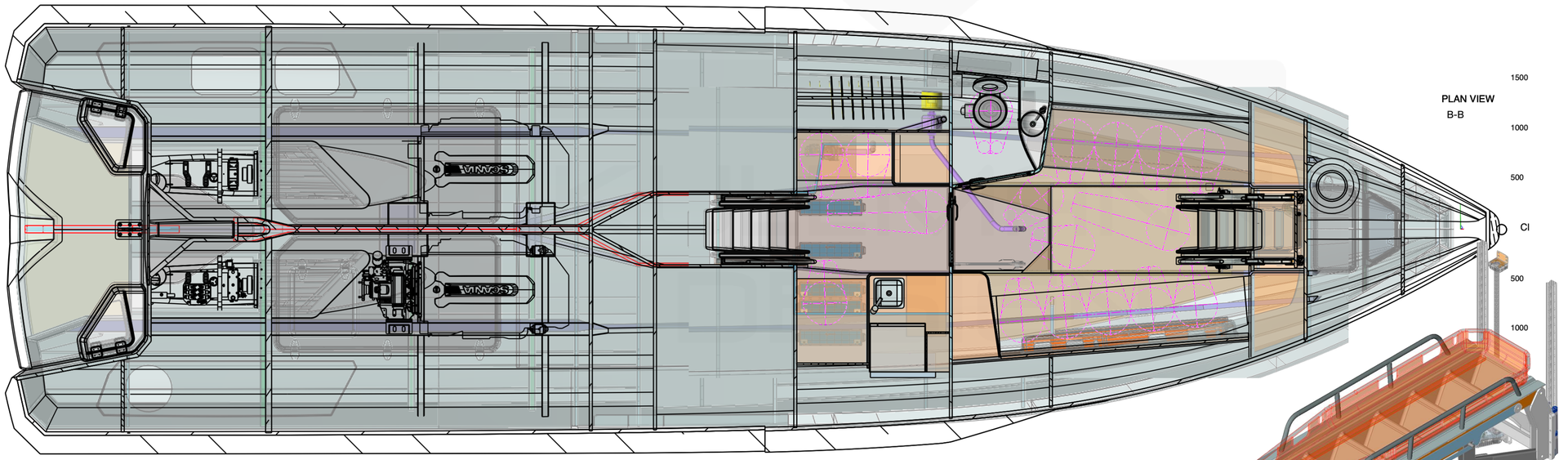
DESIGNER

BIRGER KULLMANN DESIGN
NAVAL ARCHITECTS M.SC.

Professor Dahls gate 35B - 0353 Oslo - Norway
www.kullmanndesign.eu
www.kullmann.no


A
A
3000
2500
2000
1500
1000
DWL (810)
500
PROFILE
No Trim
Port Side
15000
14000
13000
12000
11000
8000
7000
6000
5000
4000
3000
2000
1000
0
SJÖRÄDDNING
SAR





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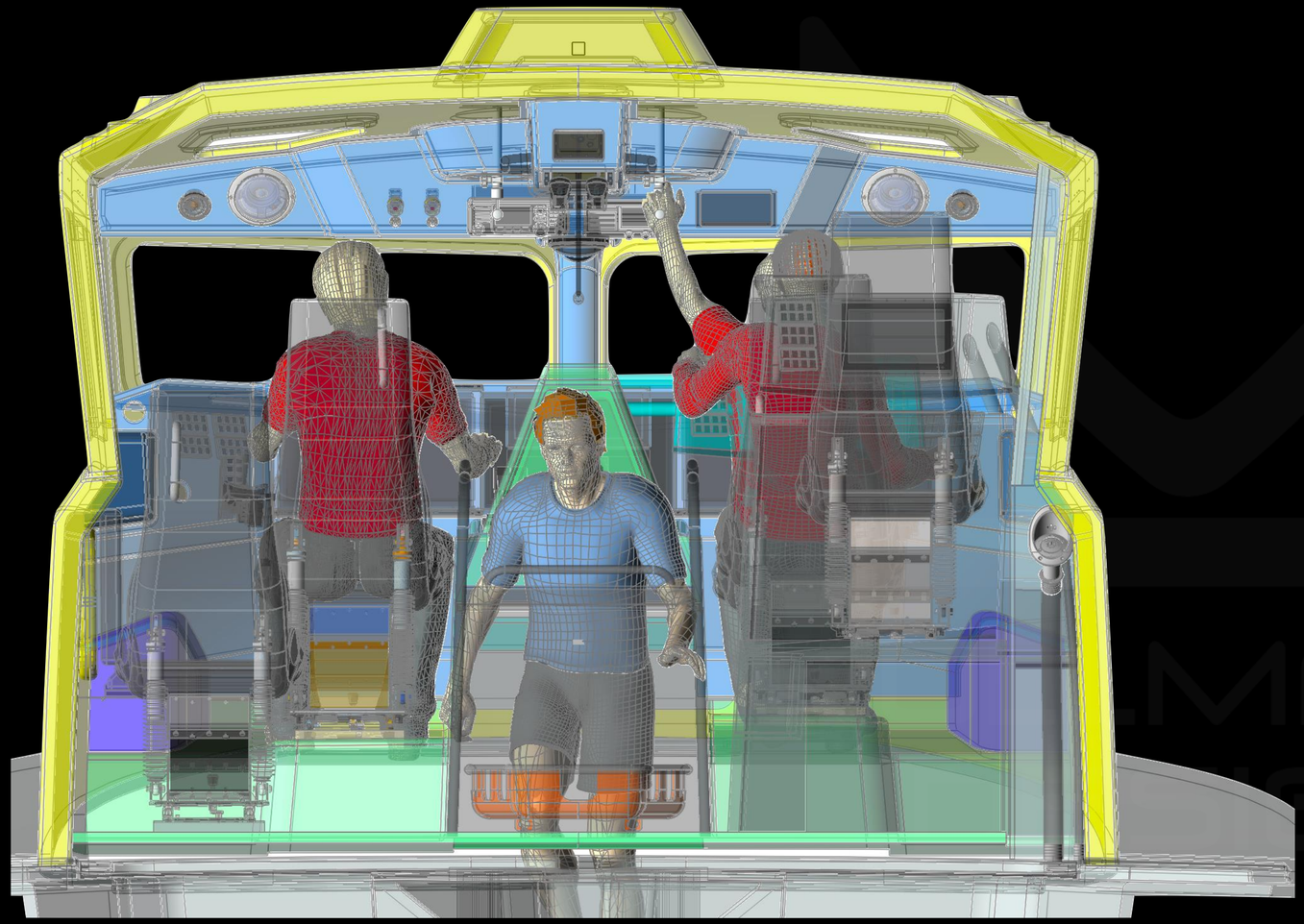
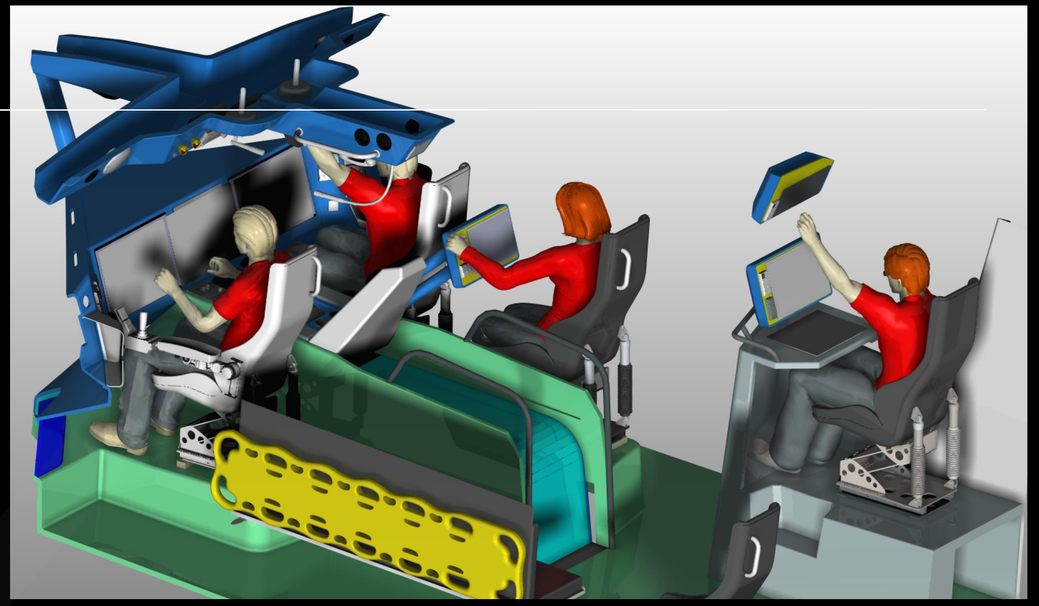
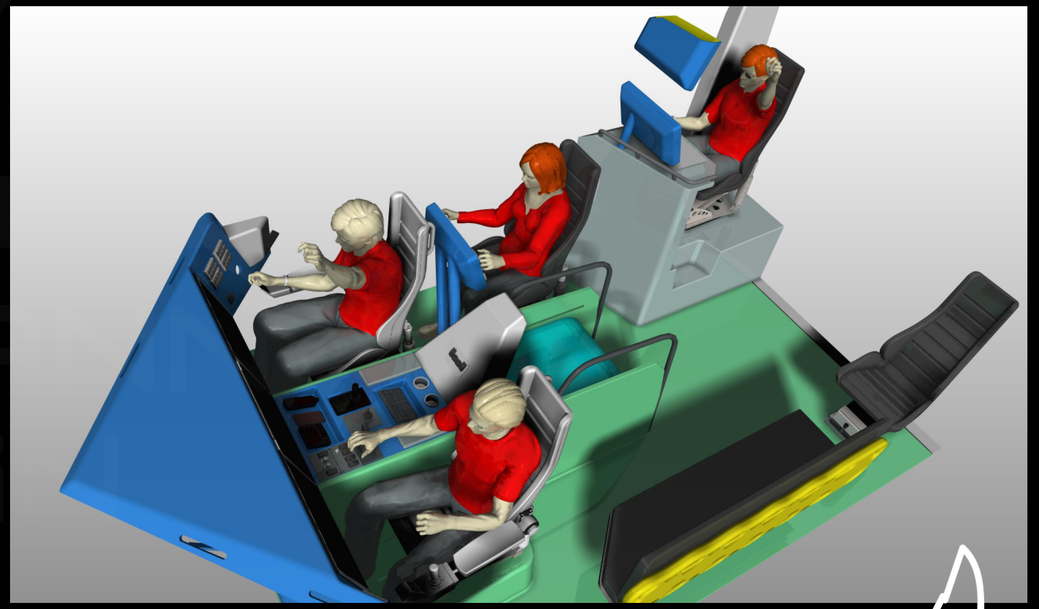
K12-SAR

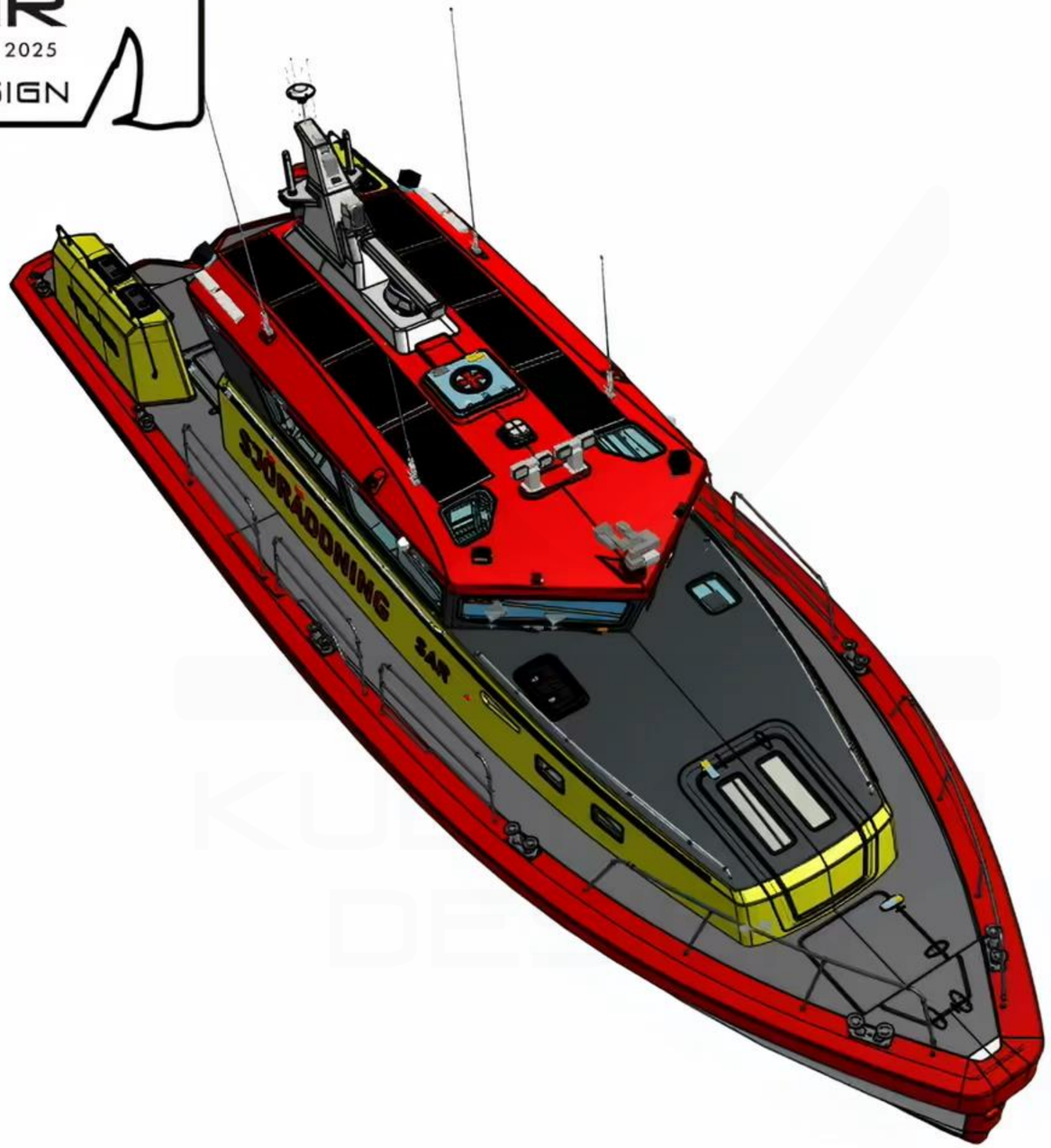
- Wheelhouse







K15-SAR
BYGGNUMMER: K15-01 ÅR: 2025
KULLMANN DESIGN



K15-SAR
BYGGNUMMER: K15-01 ÅR: 2025
KULLMANN DESIGN

Succesful design is a result of blending art and science to the correct ratio

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photo: Flygkåren/SSRS

K12-SAR
BYGGNUMMER: K12-01 ÅR: 2024
KULLMANN DESIGN