

# DESIGN SOFTWARE PROFILE & TYPICAL WORKS UNDERTAKEN

Sr.	Software Used	Brief Description of the Software	Typical Works Undertaken
1	ISYMOST	A 3D graphical software program for structural analysis	Global vessel structural strength/buckling/fatigue analysis for as built/present corroded/future predicted scantlings
			Two hold/three hold structural strength/buckling/fatigue analysis
			Floating/fix platform/rig structure module supporting frame structure/stool strength, any space frame top side-derrick, flare tower, helideck strength analysis
			Analysis of tubular joints
			F.E. Analysis for Integration of Crane pedestal with Hull
			F.E. analysis of crane boom supporting structure
			F.E. Analysis of Mooring foundations
2	NSO	A Structural static/ dynamic/ mode solver. Deterministic or spectral fatigue analysis. Includes many code checks.	Rig drill floor structure/cantilever global strength analysis
			Rig leg structural strength analysis for towage
			Engine foundation structure strength and vibration analysis
			Lifting analysis of a module or space frame structure
3	Hydrostar	Hydrodynamic software to evaluate 1st & 2nd order wave loads and induced motions of one or several ships or marine structures of any type in deep and finite water depths	Hydrodynamic analysis / RAO generation for floating bodies
			Multi body interaction analysis
			Hydrodynamic analysis of transhipper during its towage
4	FATA	A post-processing software that performs spectral analysis and short and long term statistics for sea states	Air gap analysis, green water & slamming estimations
			Extreme load evaluation for site specific conditions
			Operability sea state estimation for limiting motion parameter
			Linear and non-linear wave load estimations
5	Ariane	Software for static and time domain simulation. Fully interfaced with Hydrostar	Floating body mooring system design
			Multi-body mooring system design
			Dynamic positioning plots generation for any combinations of tunnel thruster system with use of Hydrostar, Ariane and In-house program
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6	Maxsurf	Powerful three-dimensional surface modeling system of transhipper	Upright hydrostatics
			Large angle stability
			Equilibrium analysis
7	Hydromax	Hydrostatics, stability and longitudinal strength program specifically designed to work with Maxsurf	KN values and cross curves of stability
			Limiting KG analysis
			Longitudinal Strength analysis

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8	Hullspeed	Predicting the flow resistance of a ship hull. Interfaced with Maxsurf	Total flow resistance estimation on ship hull and prediction of power requirement
9	Seakeeper	Vessel Hydrodynamic response calculating program. Interfaced with Maxsurf	Calculation of coupled heave and pitch motion and roll motion of a floating body
10	MARS	Checks strength and fatigue of frames and bulkheads as per CSR rules	Fatigue Evaluation of Longitudinal members
			Rule based calculations
11	AutoCAD	Basic drawing software 2D & 3D	Class Design Drawings like G.A., Structural drawings, Compartment Layouts, Foundations, Piping, Cabling etc.
			Vessel statutory plans like LSA, FCP, LSS etc.
			Converting/digitizing of vessel's paper drawings
12	Ship-Constructor	Ship Production Design Software for preparing detailed 3D Production drawings for fabrication of ships	Hull structure
			Piping
			HVAC
			Cable routing
			Welding
			Nesting of plates and stiffeners
13	STAAD Pro	Static and Dynamic Analysis of Structures	Analysis of Structures like buildings, Berths, Jettys for static and Dynamic Loads Design of Steel and Concrete Structures
	STAAD. Offshore	Automatic Wave Load Generation and Design for Offshore and Floating Structures	Planning, Designing, and constructing fixed offshore platforms
14	ANSYS	Linear and Non-Linear Analysis and Simulation	Linear and Nonlinear Analysis/ Simulation of Structures and structural components for static and Dynamic loads
15	DELFT-3D	Solves shallow water equations and other transport equations to simulate hydrodynamics, sediment transport, salinity dispersion, temperature dispersion.	Assessment of estuarine, coastal and river hydrodynamics and wave conditions.
16	SWAN	Spectral wave model which has capability to simulate wind generated short crested waves.	Transformation of waves from deeper depths to near shore areas. Generate annual wave climate for a particular transshipment area. Wave tranquility studies in Harbors.
17	RHINO	3D Hull surface/solid modeling software	Preparation of transhipper 3-D Model
18	EXTEND SIM	Simulation of cargo flows	Modelling of barge fleet movements, loading and unloading times, tidal delays, cycle times, crane movements, vessel arrivals.
19	ORCAFLEX	Dynamic analysis of offshore marine systems	Design of moorings, risers, pipelay installation, hoses, buoys and towage