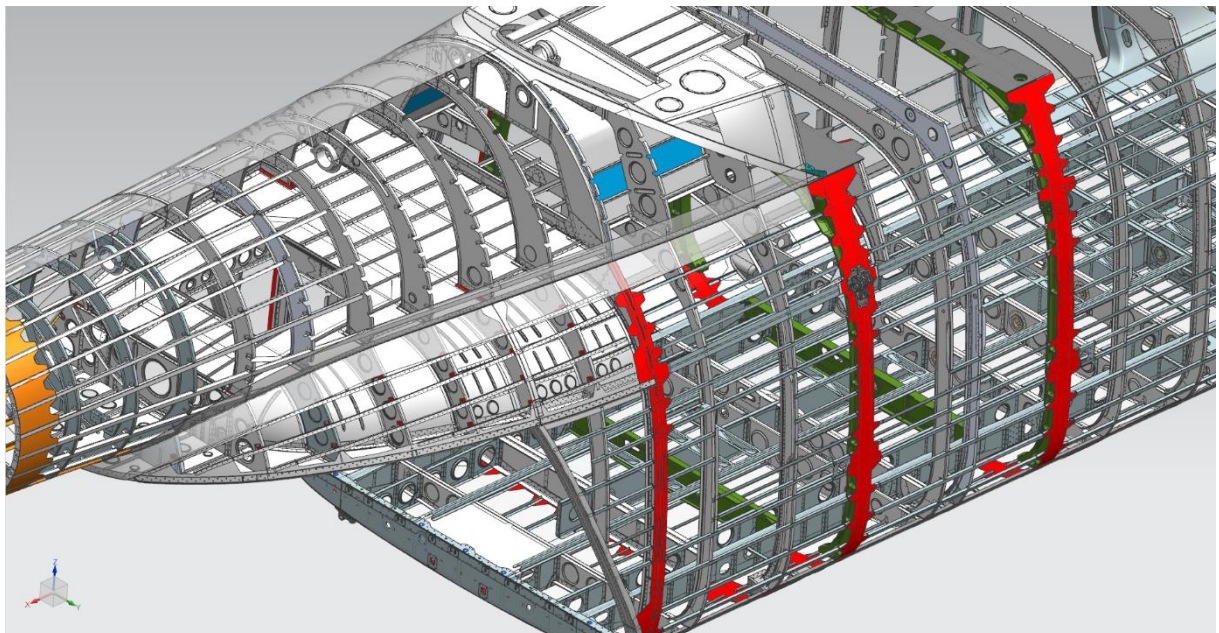
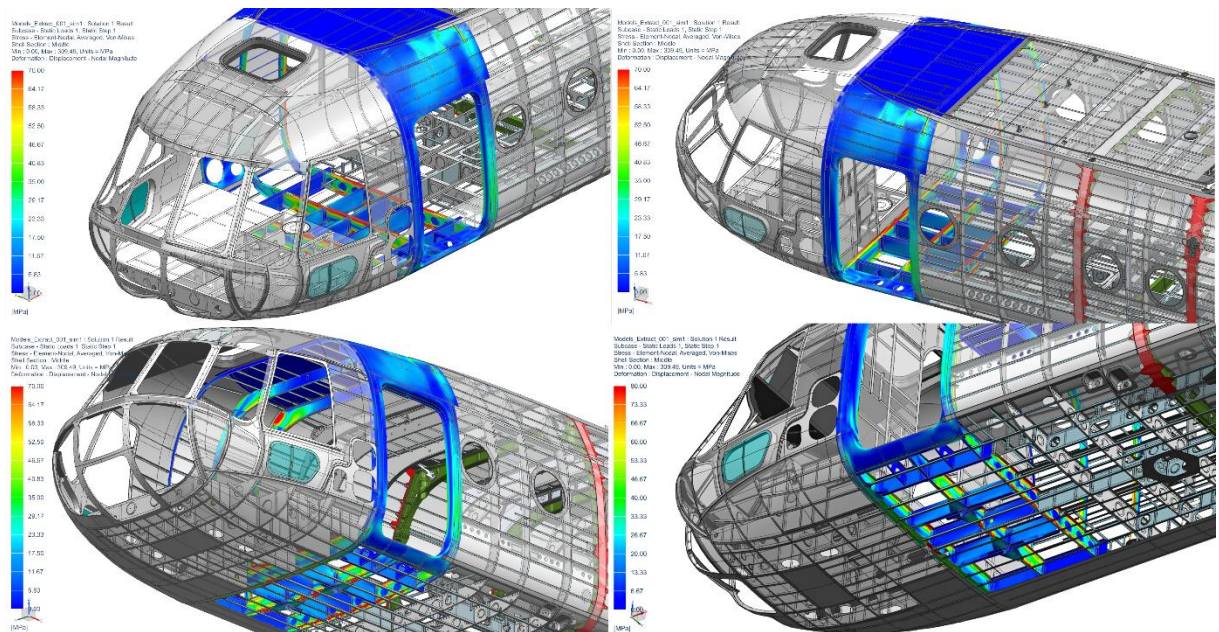


Customer	Avionams Plc., Plovdiv, http://www.avionams.com/bg/home.html
Contact	Jordan Novakov, office.pld@avionams.com
Task	Precise digital mock-up of MIL MI-8 helicopter for structural simulation for planning emergency repairs
Results	Being able to simulate the structural forces and dependency over the entire set of assembled parts, the repair organization is able to spare both material and effort in performing emergency repairs after collision and crash events

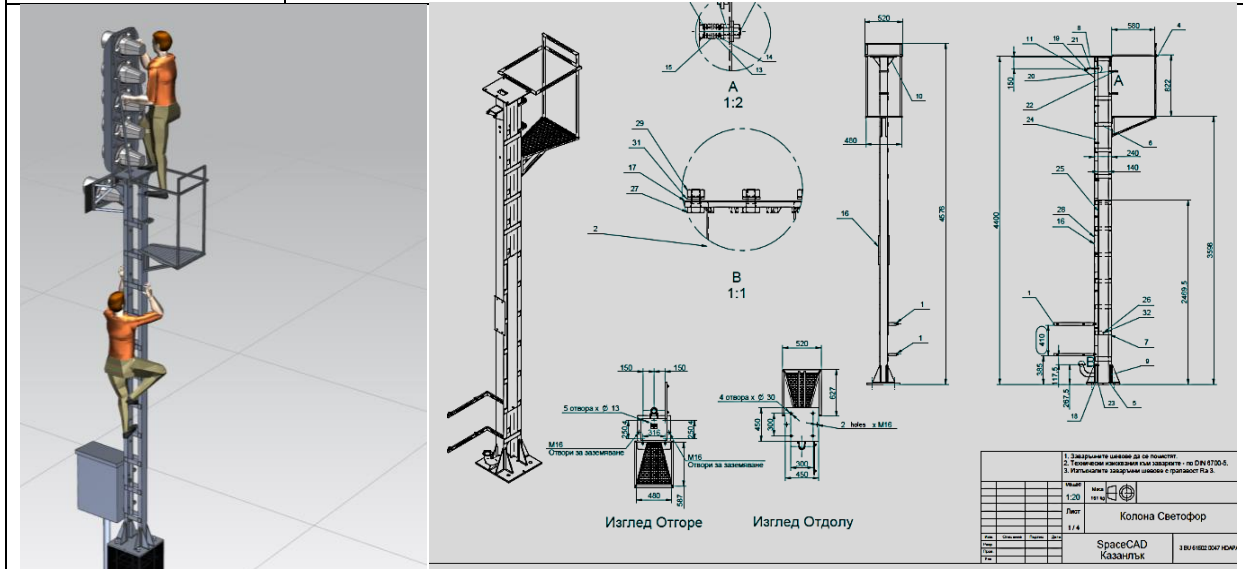


The precise digital model has been created based both on manufacturers sketches and precise laser 3D scanning data



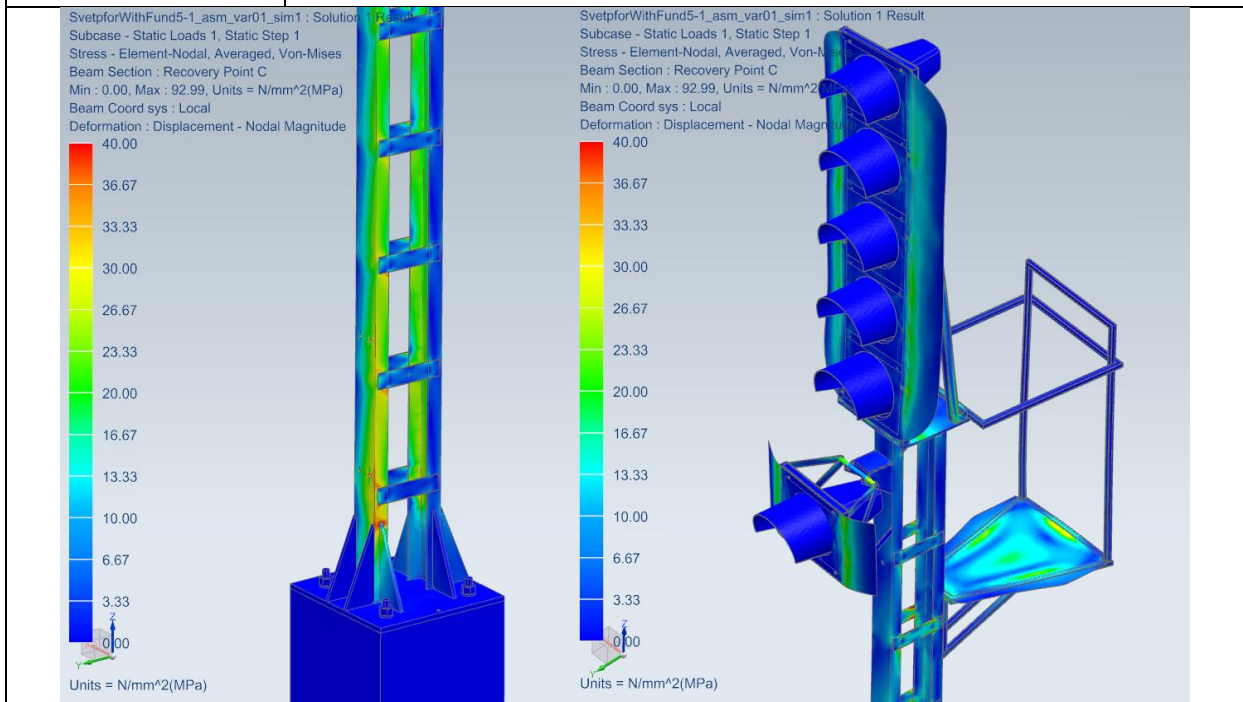
Using advanced FEM/FEA tools from SIEMENS Industry Software, SpaceCAD is able to perform full set of structural simulations for precise planning of emergency repairs on Mi8 helicopter

Customer	Thales Rail Signaling Solutions, http://www.thalesgroup.com/
Contact	Victor Todorov, victor.todorov@thalesgroup.com
Task	Design and construction documentation for a series of traffic-light structures with complete drawing documentation.
Results	Ergonomic construction that meets the standards of reparability and easy maintenance. Optimized price-performance ratio while maintaining current standards.



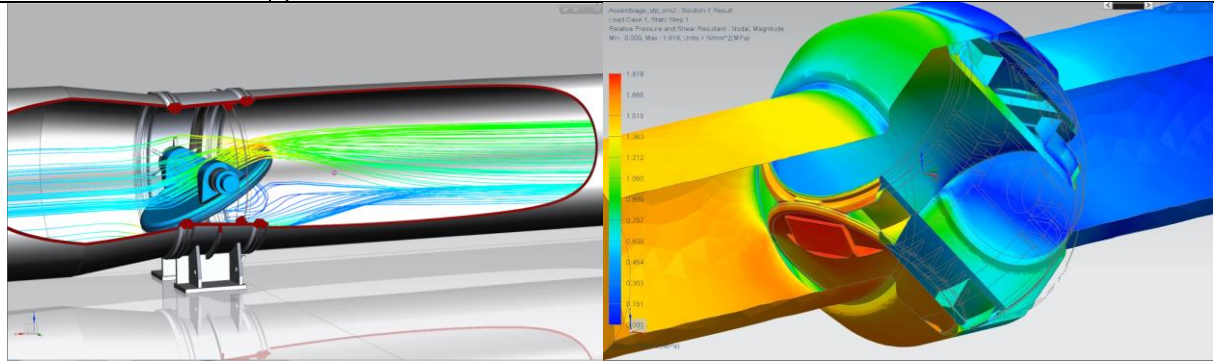
Inspection for suitability, installation drawing documentation

Customer	Thales Rail Signaling Solutions Josef Biro, j.biro@thalesgroup.com
Task	Design of lightweight signal structure with optimum safety factor under limit loads.
Results	Optimally secured design under limit loads - storm surge and airflow when passing a train.

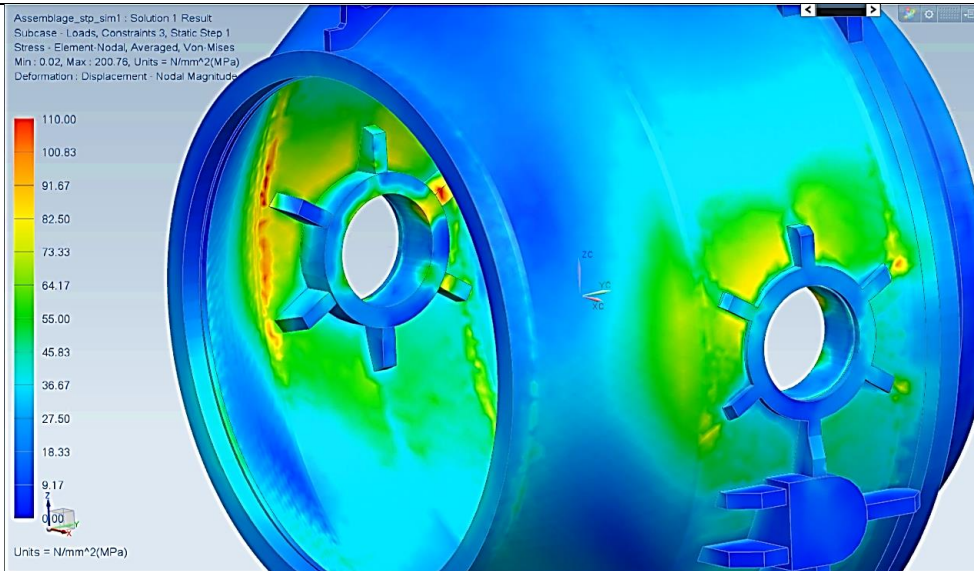


Maximum equivalent voltages in complex traffic light construction - mast, front plate, service and repair area.

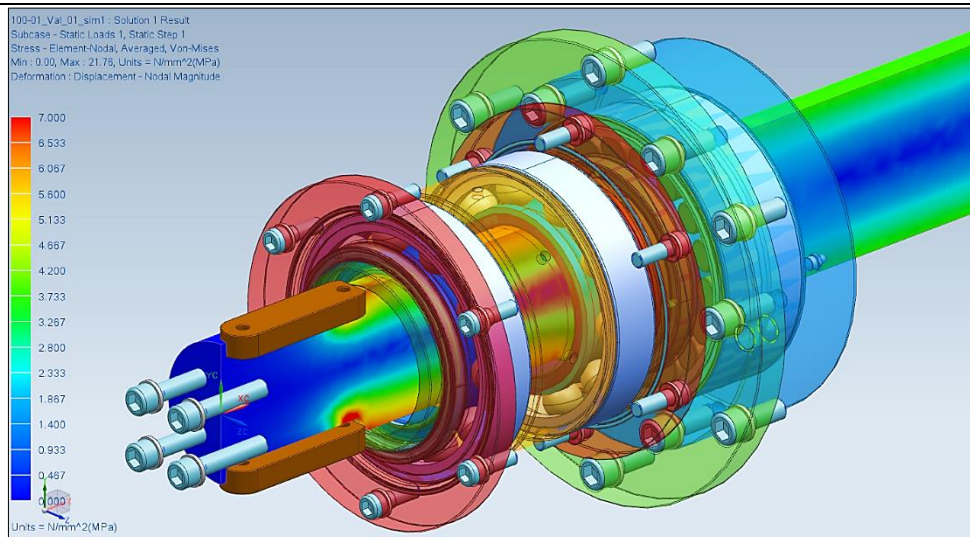
Customer	VAPTECH PLC, http://www.vap.bg/
Contact	Ivalina Kirilova, ivalina.kirilova@vap.bg
Task	Optimization of the mechanism of a valve valve for a hydropower plant
Results	Reduces project lead time, lowers cost, and guarantees user-defined parameters



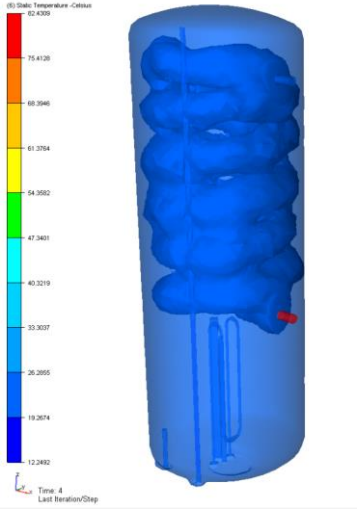
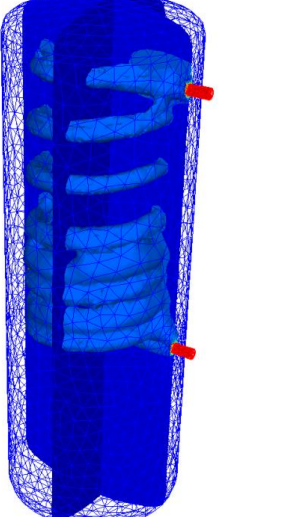
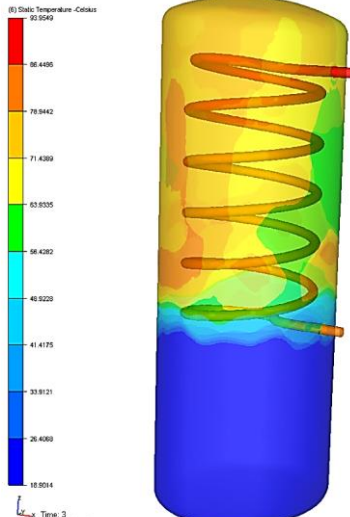
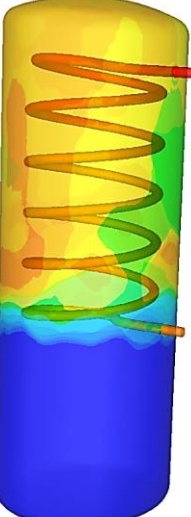
Fluid analysis of valve flow. Fluid velocity and turbulent vortices.


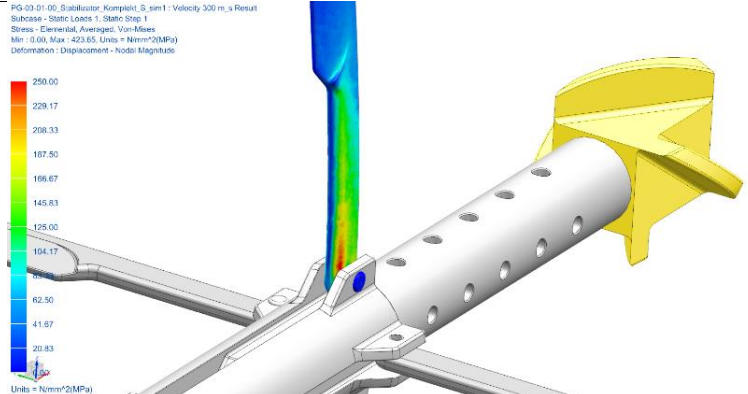


Resultant equivalent stresses in the workpiece housing due to the load on the slide valve during operation.

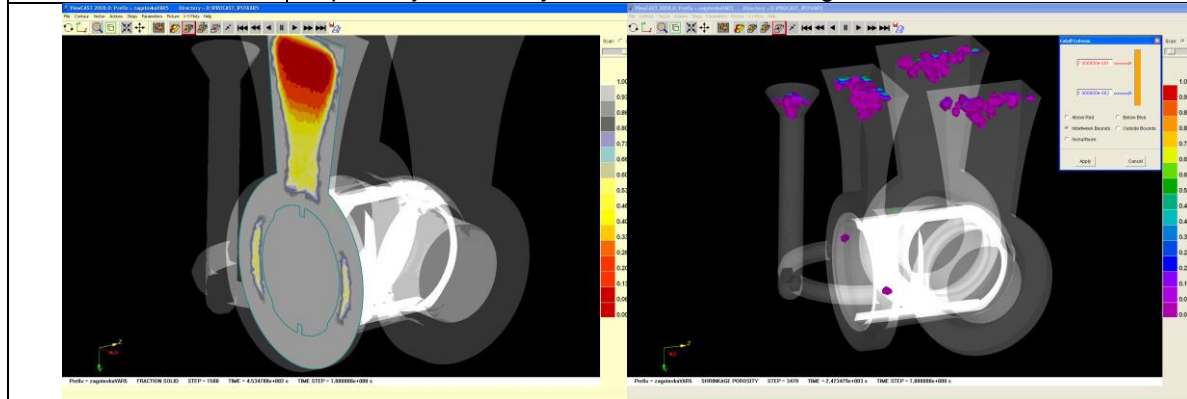


Press contact simulation and deformation analysis

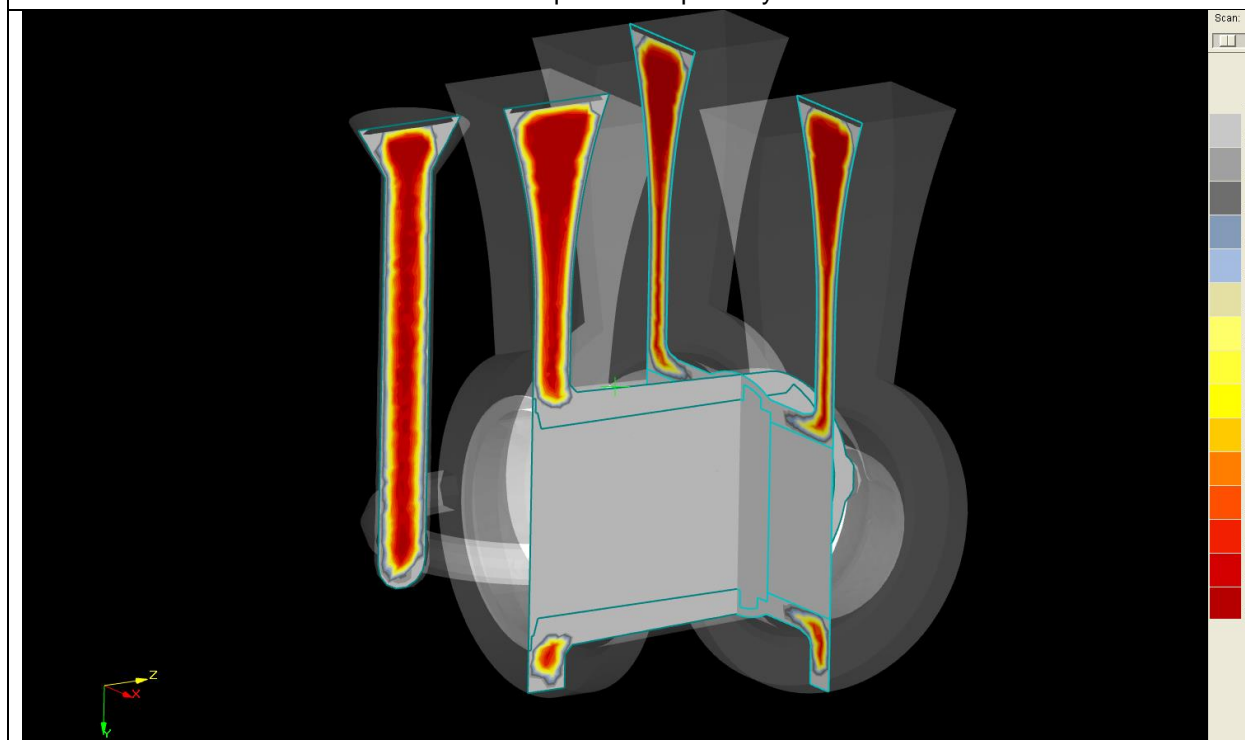
Customer	Eldom Invest PLC, http://www.eldominvest.com/	
Contact	Vesselin Bonev, ves_corp@yahoo.com	
Task	Functional thermo-fluid optimization of a water heater with a heat exchanger (coil)	
Results	The results of the analysis give information about optimizing the length of the coil and the location of its vertical position in the water tank.	
		
	Heat exchange - volume distribution	Heat exchange - heat transfer rate
		
	Temperature distribution	

Customer	VMZ Plc, http://vmz.bg/en/
Contact	Ivan Getsov, office@vmz.bg
Task	Simulation and optimization of a hand grenade launcher
Results	Lowering the weight and keeping the structural strength of the unit has been achieved through FEM/FEA simulation, analysis and design optimization
	
	 <p>PG:03.01.00; Stabilizator_Komplekt; S; sim 1 - Velocity 300 m/s; Result Subcase - Static Loads 1; Static Step 1 Stress - Element, Averaged; Von-Mises Min: 0.00; Max: 250.00; Units: N/mm²(MPa) Deformation - Displacement - Node Magnitude Units = N/mm²(MPa)</p>

Customer	IPO Ltd., http://www.ipo-bg.com/index.ipo
Contact	Naiden Chetinov, chetinov@ipo-bg.com
Task	Reducing the needs to rework of metal parts
Results	Simulation of the metal casting process to select the type of casting system and infusion points, allows a virtual test of the variants with respect to liquid phase closure in semi-solid volumes (dead-head operation) and the withdrawal of porosity zones beyond the detailed casting

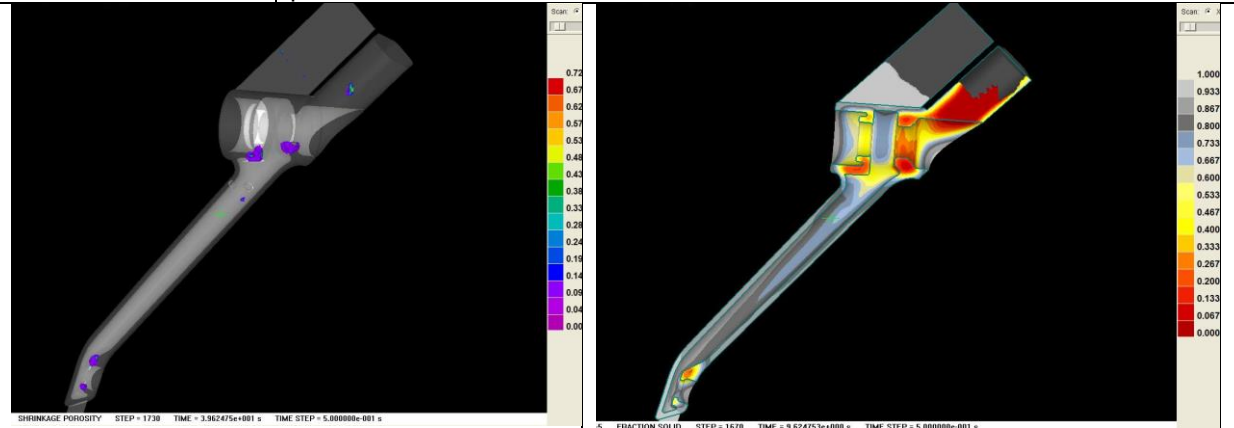


Prerequisites for porosity



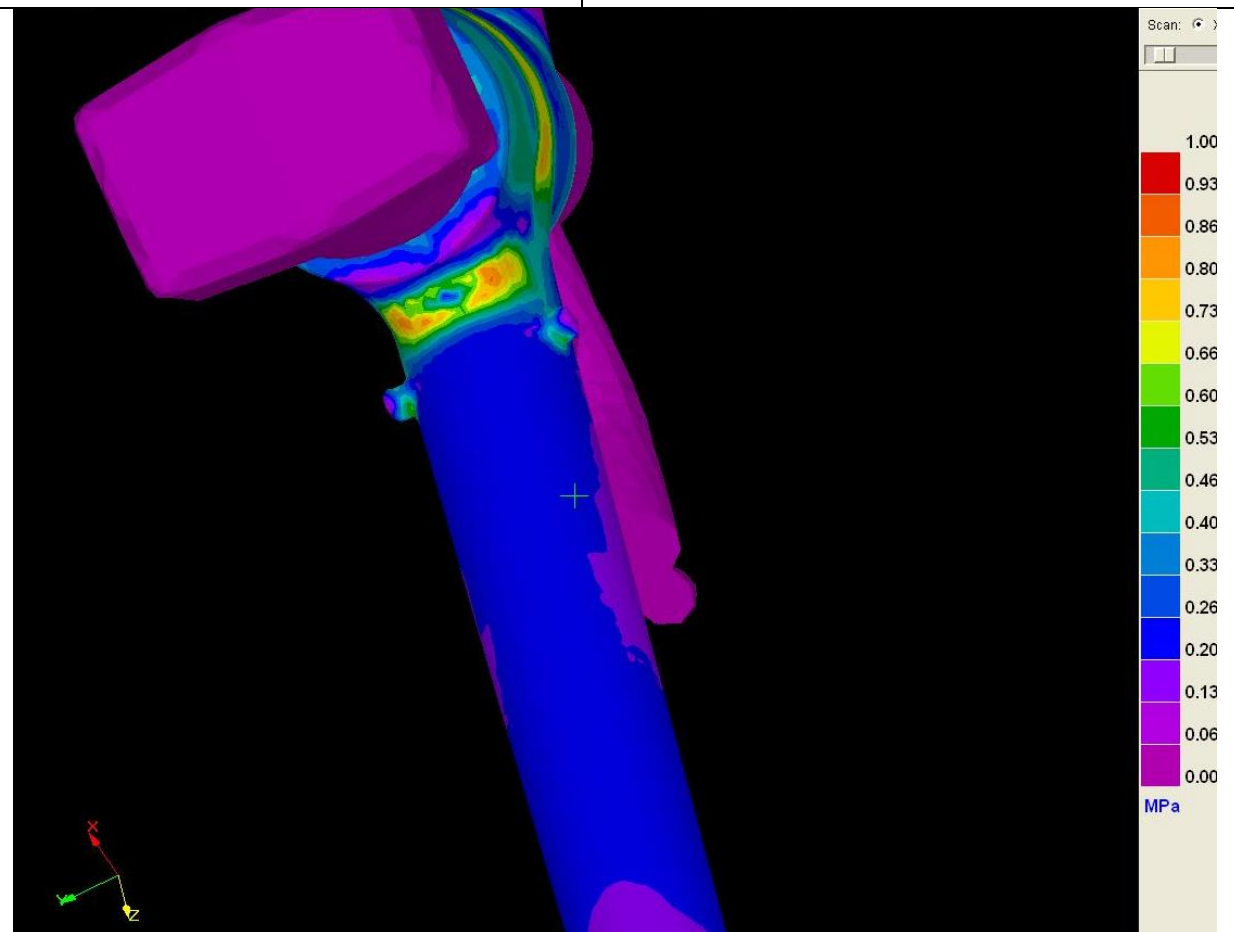
Solidification - function of a dead heads

Customer	Ideal Standard Bulgaria
Contact	Vania Kopcheva, KoptchevaV@aseur.com
Task	Simulation and optimization of foundry process
Results	Fixing a problem with the appearance of structural defects due to an incorrectly selected moment to open the mold and resulting from this sharp supercooling. Corrections in the technological times of the semi-automatic process.



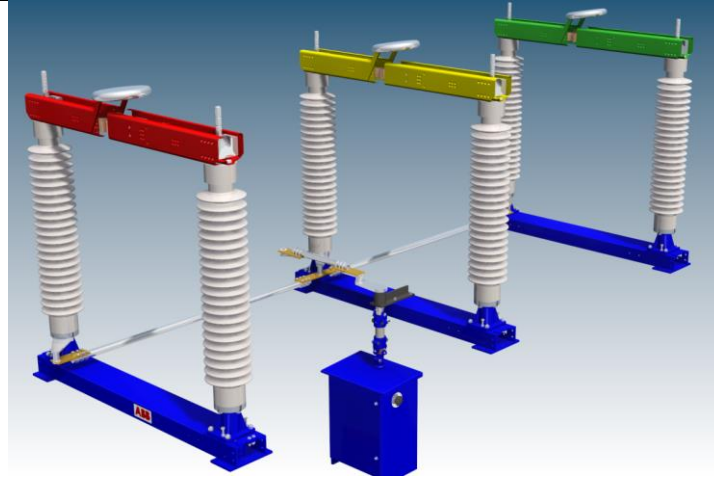
Areas with probable micro-porosity

Solidification - problem areas

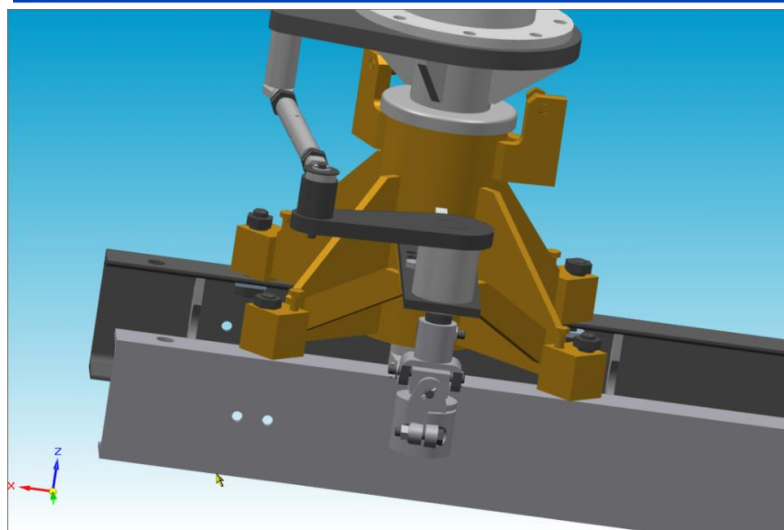
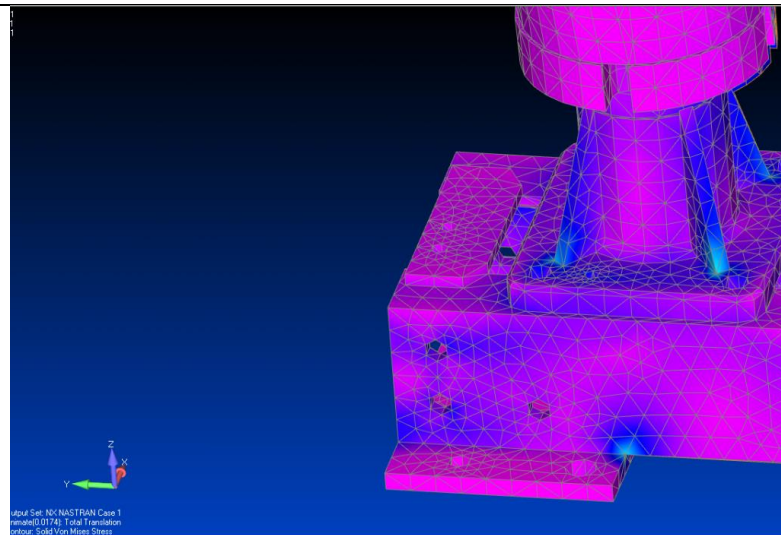


Areas of effective residual stress

Customer	ABB Avanguard, http://www.abb.bg/
Contact	Miroslav Petkov, miroslav.petkov@bg.abb.com
Task	Kinematic simulation for safety verification
Results	Changes in the kinematic motion scheme to add backflow to break the icy crust. Improved reliability and safety with the remote control of the switch.

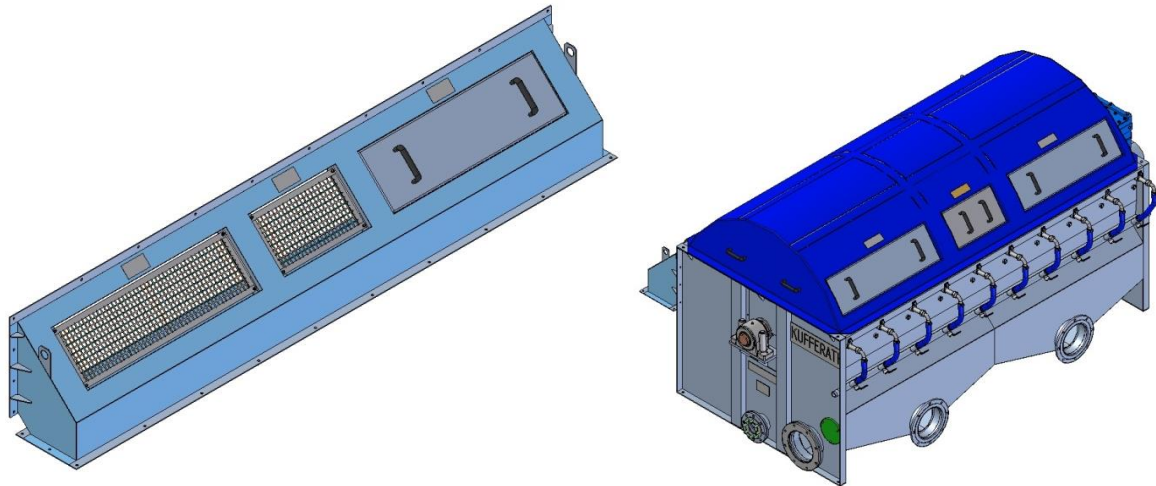


Assembled kinematic model of horizontal high-voltage disconnector

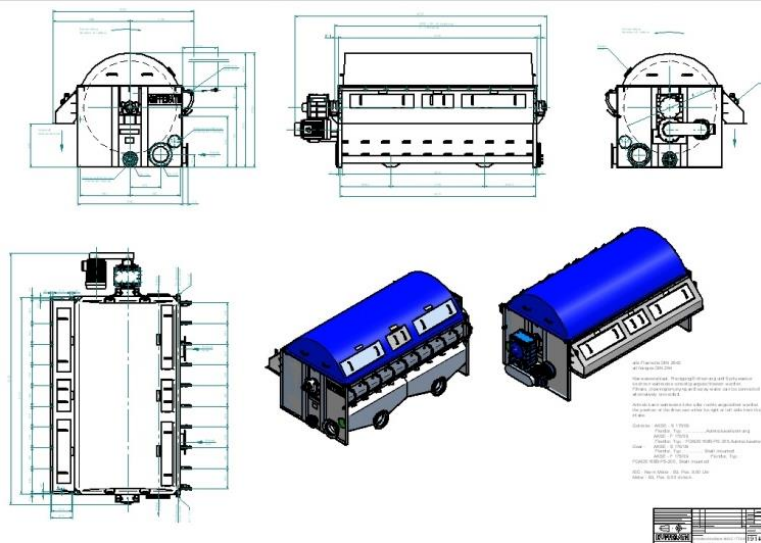


Areas with maximum load and kinematic optimization

Customer	Andreas Kuferath GmbH, http://www.bellmer-kufferath.de/
Contact	Bernhard Schwarz, schwarz@bellmer-kufferath.de
Task	Reverse engineering in 3D design of separation and chemical processing lines
Results	Design of machine parts from 2D drawings and sketches. Creating drawings for production needs. Completion period - three weeks.

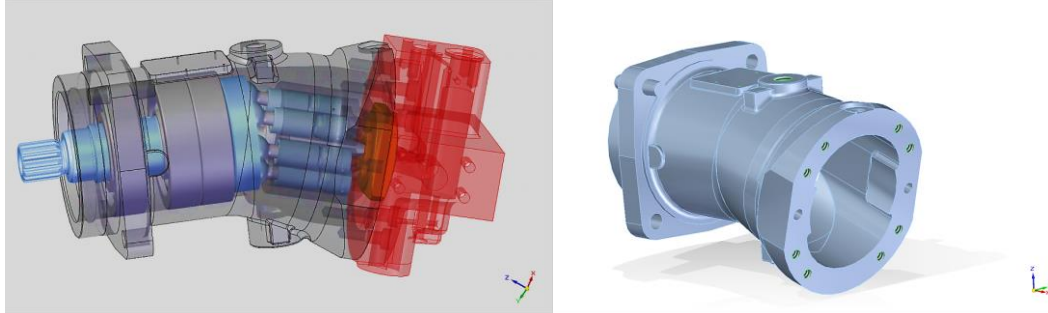


Drum water separator

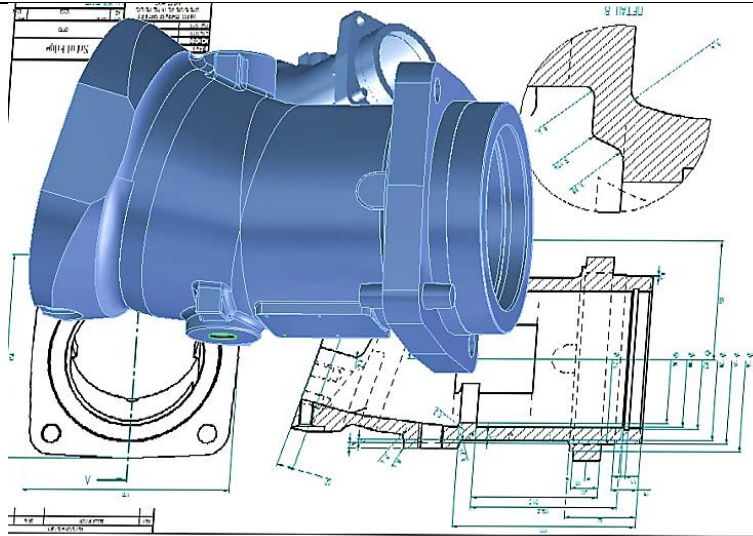


Assembly drawings

Customer	HES PLC, http://www.hes-co.com/
Contact	George Tartarov, project@hes-co.com
Task	Reversible engineering in 3D design of a hydraulic motor under licensed drawing documentation
Results	Design, simulation and kinematic analysis of a computer 3D prototype, based on the provided 2D drawings. Optimal design for correct drawing and technological documentation

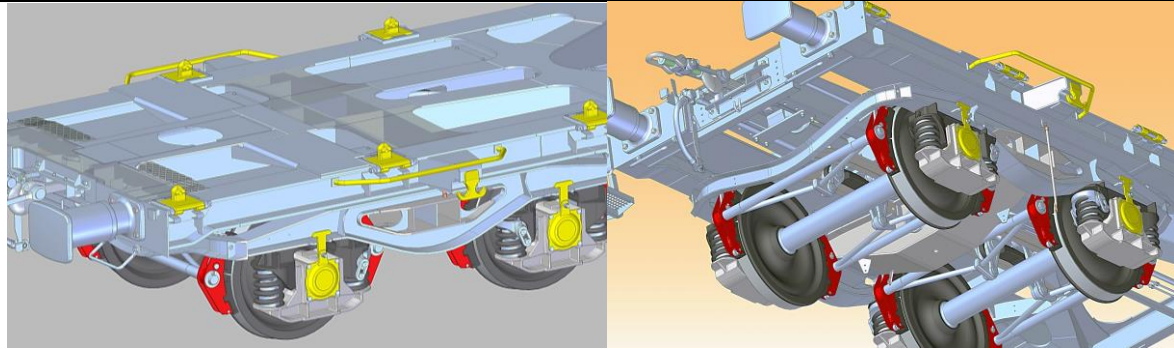


Assembled model of hydraulic motor and body part

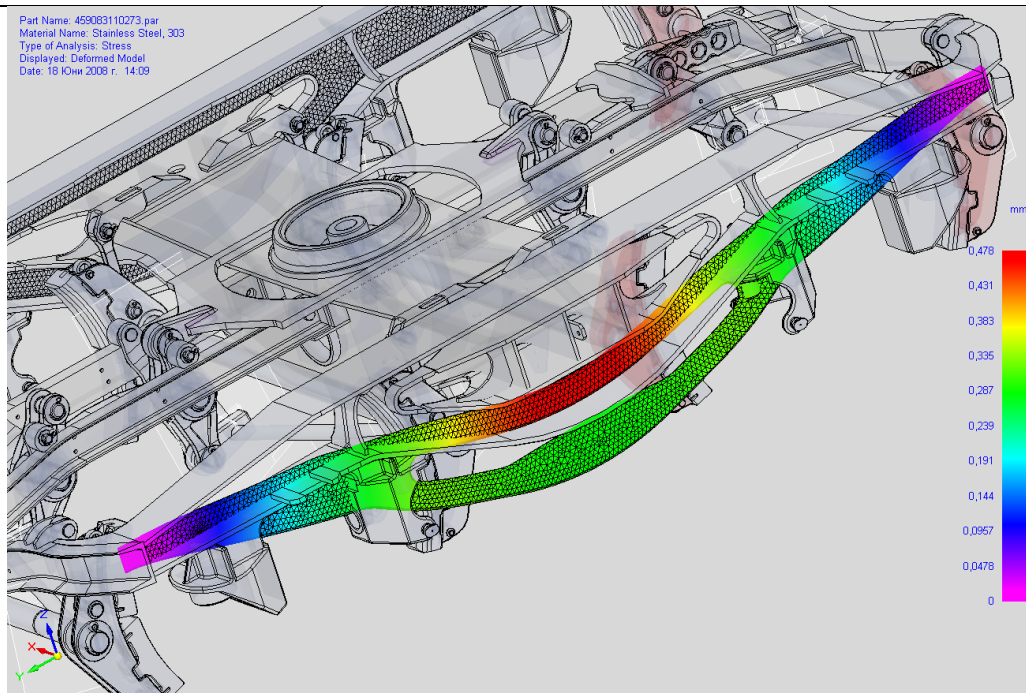


Reversing engineering - from drawings and sketches to assembled product

Customer	VRZ Karlovo, PLC , http://www.vrz-karlovo.com/
Contact	Nikola Vassilev, vasilev@vrz-karlovo.com
Task	Reverse engineering for 3D railway wagon design based on licensed drawing documentation from combined sources for constituent components
Results	Fast construction and accurate documentation for the production of a new line of wagons with a length of 22 meters. Generation of precision for detailed welding plans and control of basic dimension ratios

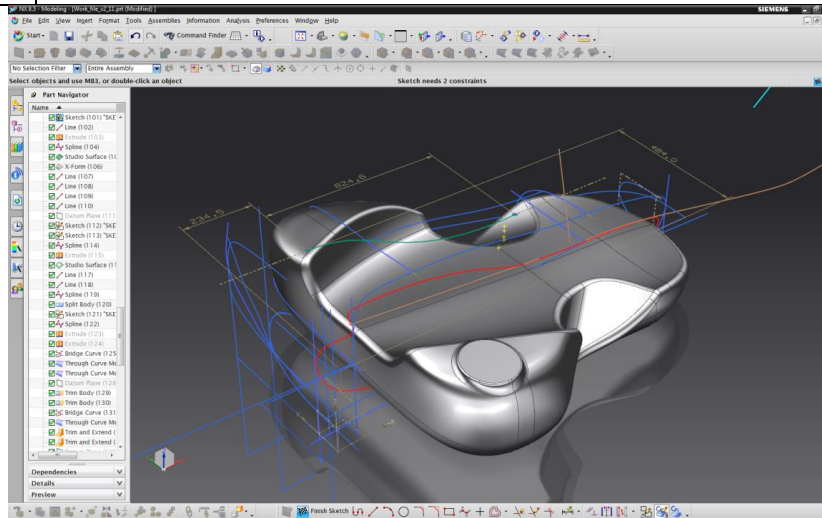


3D model frame and bogie



Static analysis for carrier frame optimization

Customer	Avidelta PLC Kazanlak, http://www.aviodelta.com/
Contact	Daniel Iliev, design@avio-delta.com
Task	Designing a body of a plastic tank for a light aircraft
Results	Optimal aerodynamics of an external plastic fluid reservoir with high quality surfaces, consistent with the kinematics of the chassis

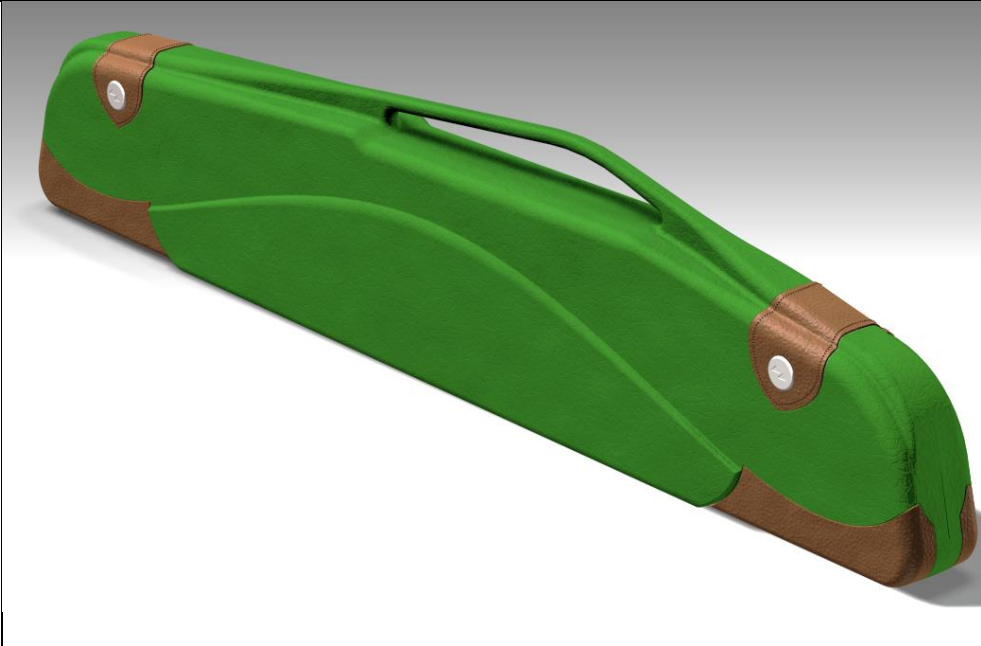


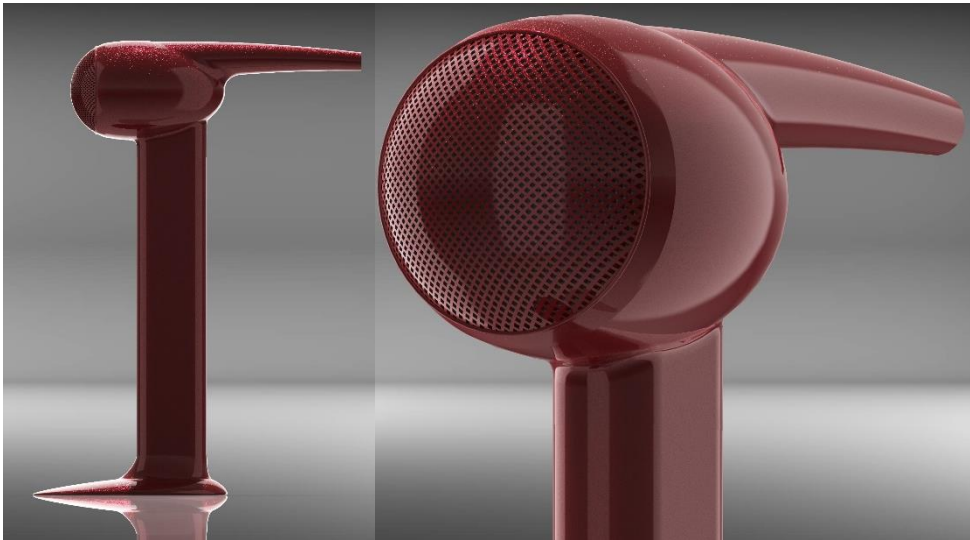
3D tank model with fill level analysis



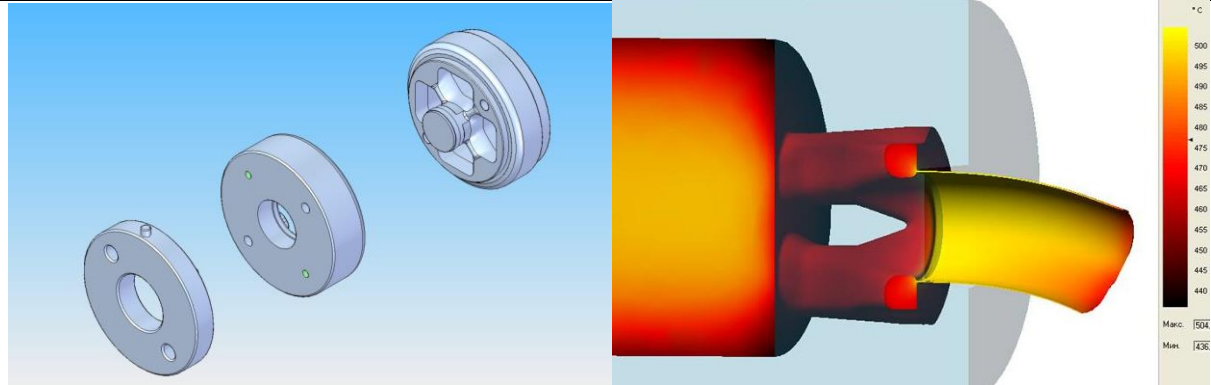
A digital model of a tank mounted to the housing



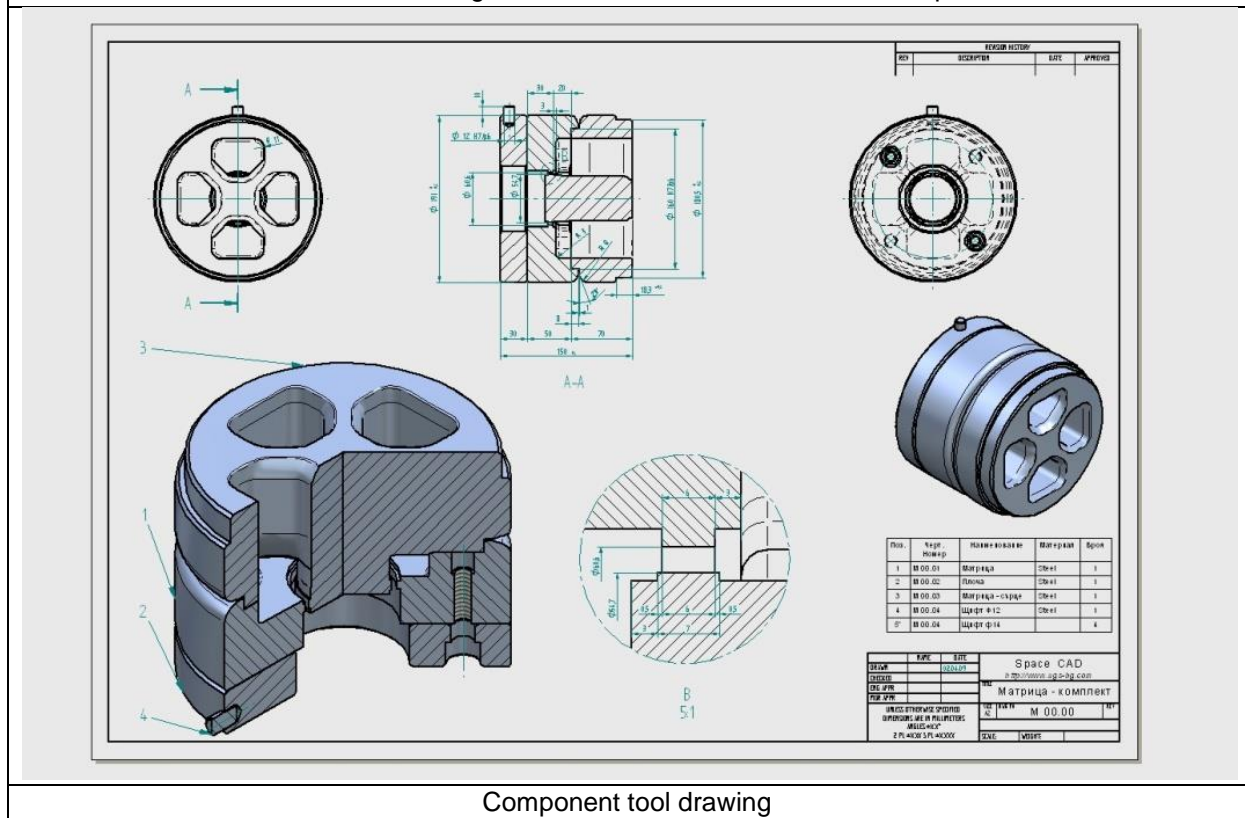
Design image of the model	
Customer	Hilman Co , http://www.stokibg.com/
Contact	Tania Kostadinova, tkostadinova@gmail.com
Task	Stylish design of a suitcase according to customer specifications
Results	3D design and construction documentation of a hunting weapon case, designed with ergonomic outsourced manufacturing
Design image of the case model	

Customer	SpaceCAD Ltd. , http://www.spacecad.bg/
Contact	Balyo Dinev, bdinev@david.bg
Task	Stylish design of a home loudspeaker
Results	Prior to be built using 3D printing technology, this loudspeaker has been designed and visualized for checking the optical performance
Design image of the speaker model	

Customer	Stillmet PLC, http://www.steelmet.bg/
Contact	Assen Anguelov, aangelov@steelmetbg.vionet.gr
Task	Design of matrix for hot metaal forming of aluminum
Results	Significantly extended service life of aluminum forming tool.

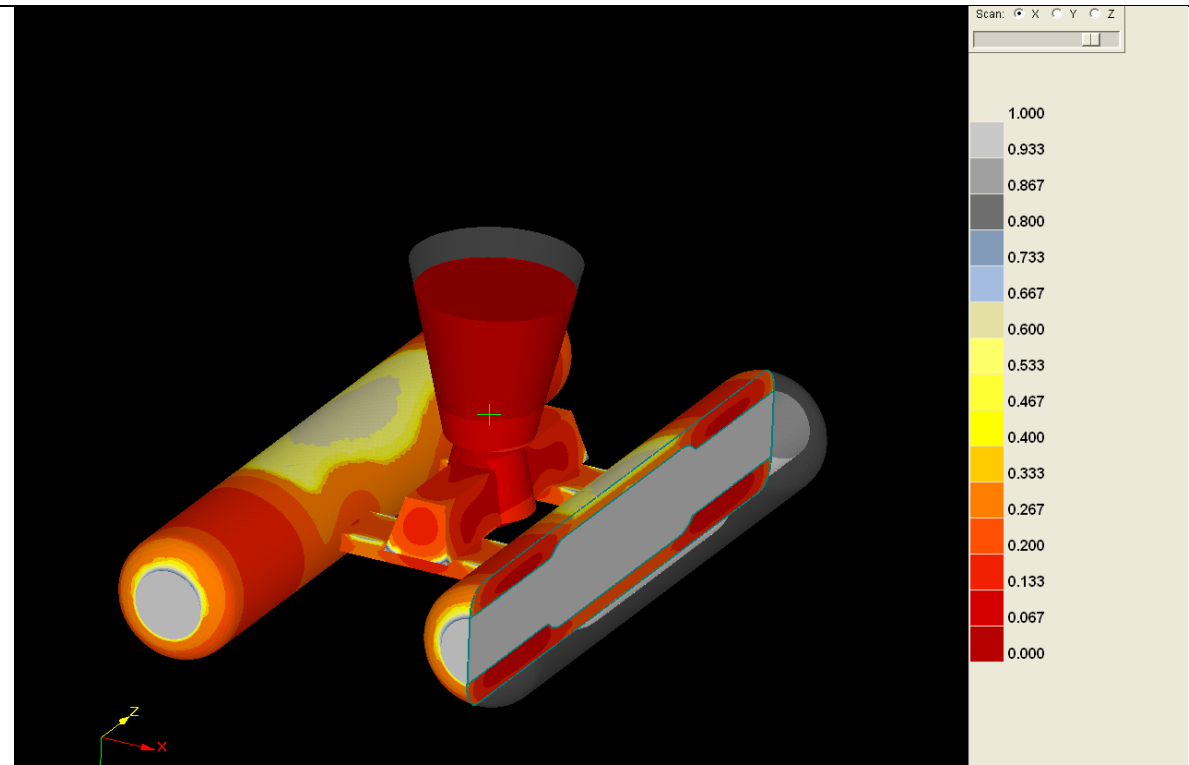
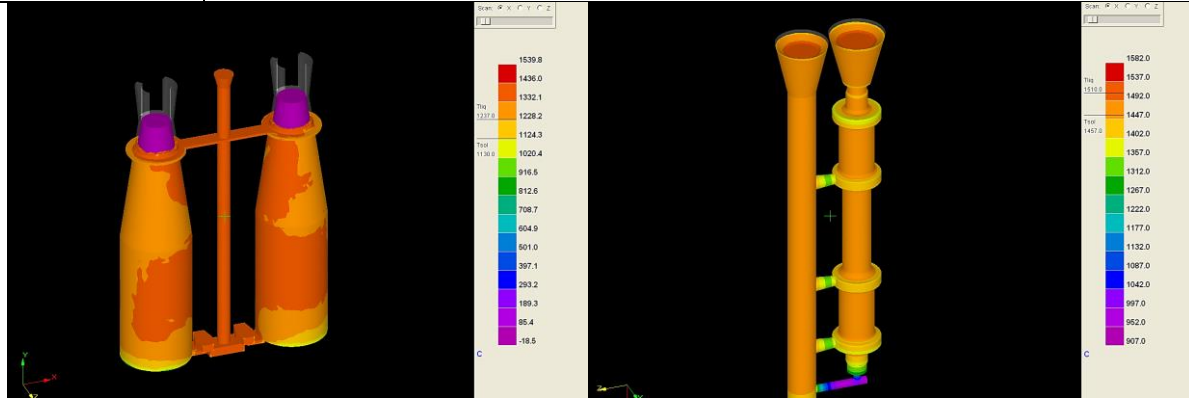


3D model of the designed matrix and simulation of the work process



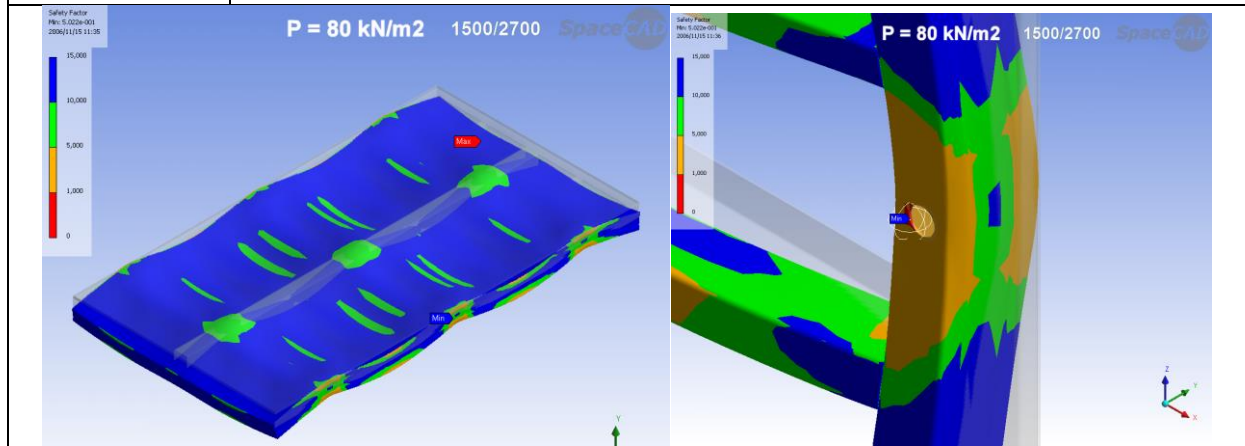
Component tool drawing

Customer	BAMEX Ltd., http://www.bamex.bg/
Contact	Marian Genovsky, office@bamex.bg
Task	Optimization of metal casting molds and process
Results	Optimal tool through virtual test and simulation of a liquid-liquid casting system for semi-solid volumes (dead heads operation) and prediction of areas with porosity beyond the detailed casting and structural defects

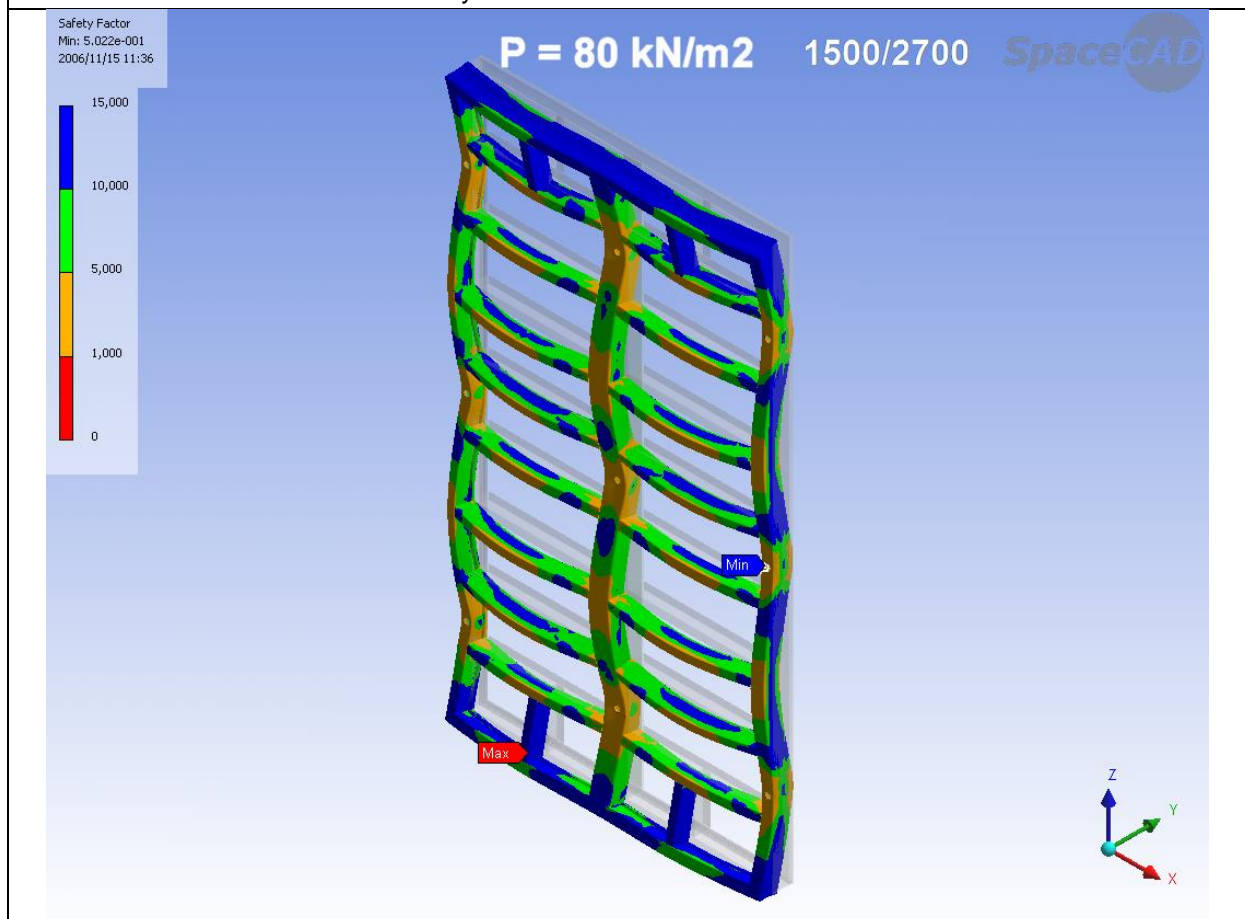


Process Simulation - Form Filling and Temperature Distribution

Customer	"Kofragna Technica" AD, http://www.kofragna-bg.com/
Contact	Stoyan Velikov, ek@kofragna-bg.com
Task	FEM / FEA structural analysis and simulation of frame steel formwork
Results	Software engineering analyzes validate set design values and accelerate the prospective design of a new product configuration of frame steel shuttering

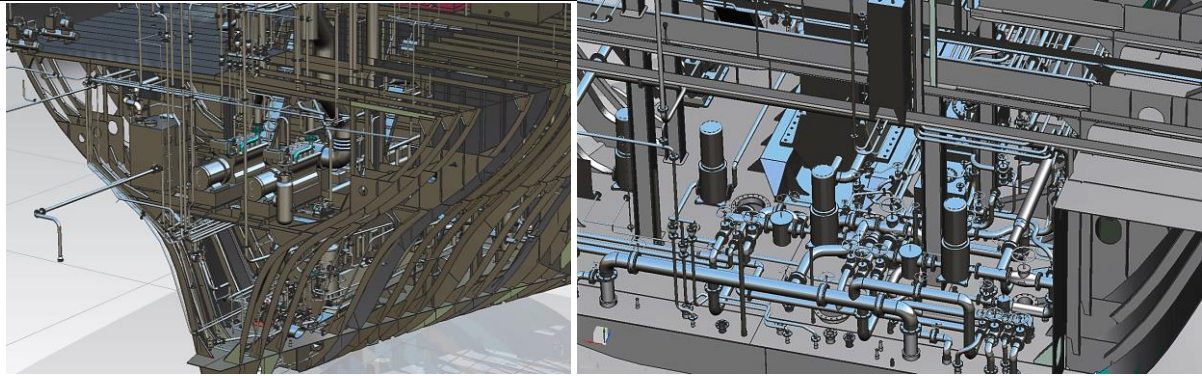


Determination of safety factor for the construction and critical load zones

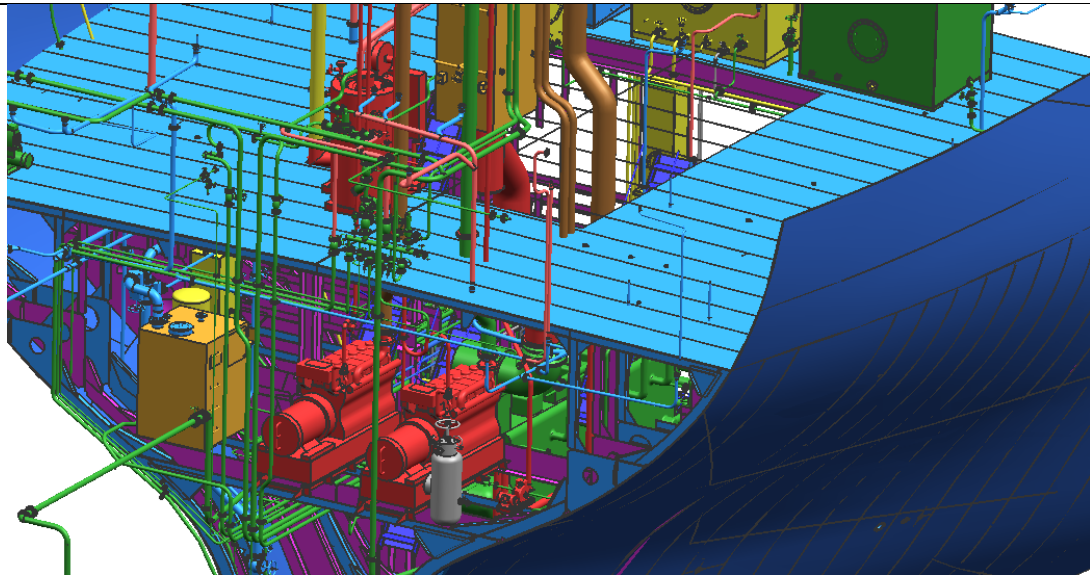


Distribution of critical areas

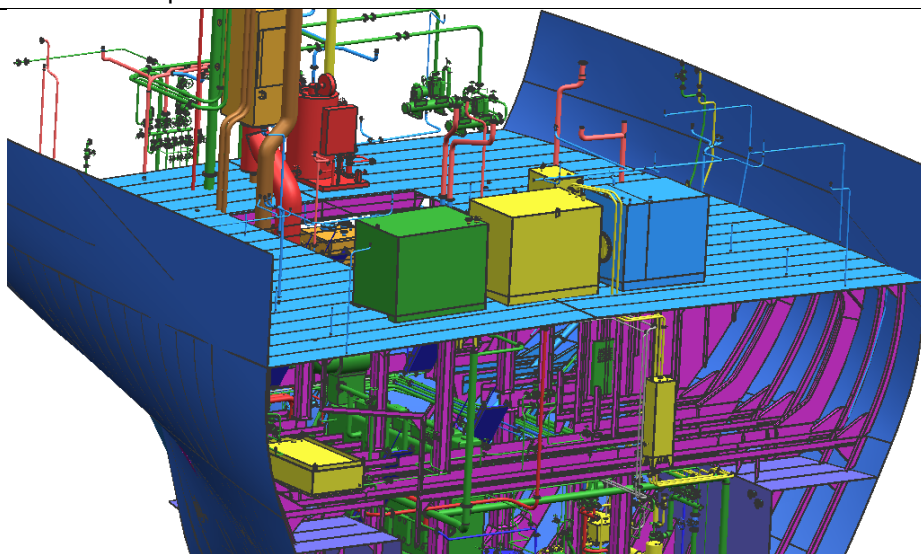
Customer	Saigon Ship Industry Co., http://www.ssic.com.vn/
Contact	Tran Tan Cham, scd@ssic.com.vn
Task	Implementation of ship design automation solution
Results	With the transition to the upper class, Saigon Ship Industry Corp. successfully transitioned from 2D drawing to full 3D design of cargo ships



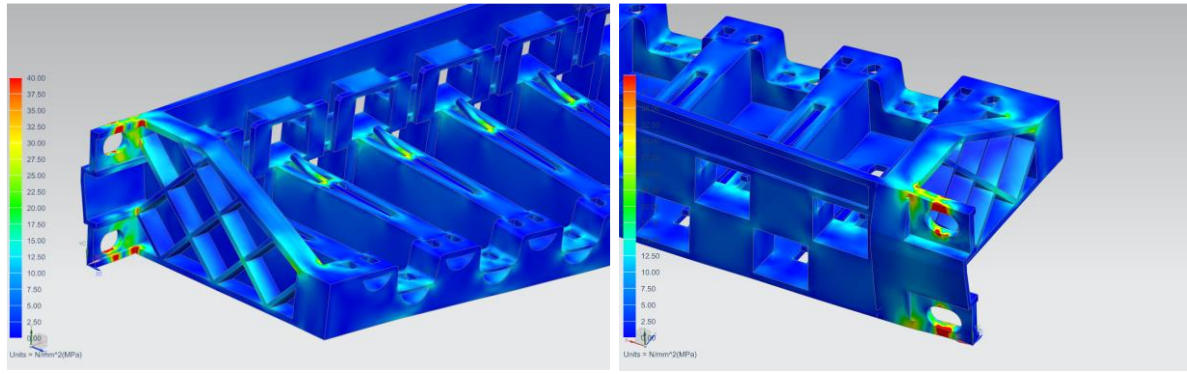
3D model of the ship's engine room



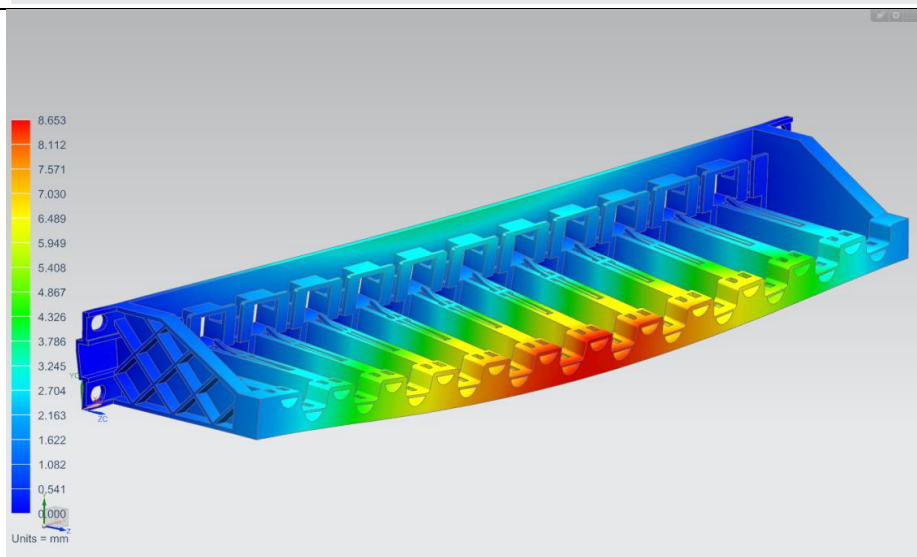
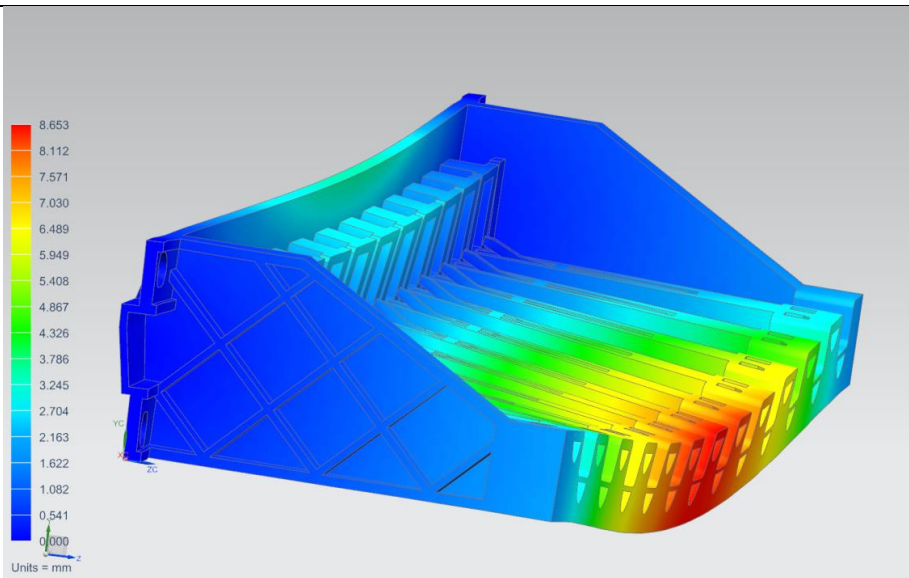
Components of sheet material with real distribution on the hull



Customer	Reichle & De-Massari AG , www.rdm.com
Contact	Nadejda Zidarova, nadejda.zidarova@rdm.com
Task	A series of simulations to study the design of a 24 port plastics distribution panel
Results	Eliminating the need to create an expensive prototype design tool at a preliminary design stage. Reducing the cost of the product

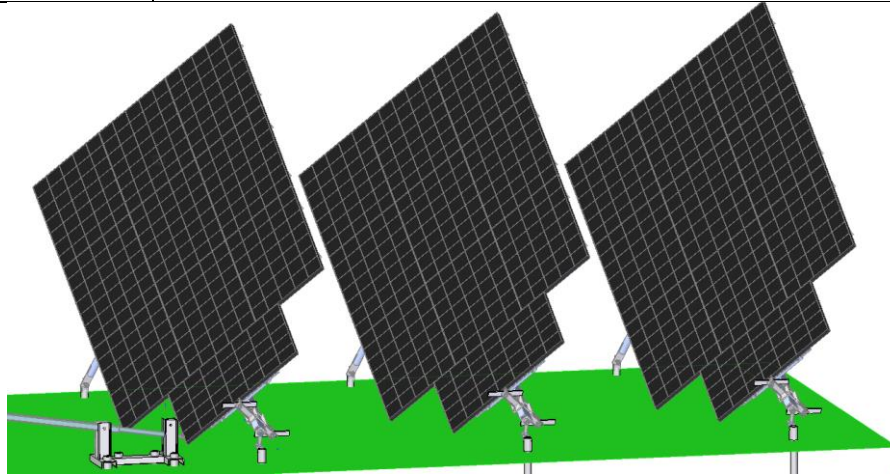


Stress, generated in 24 port distribution panel due to load during operation

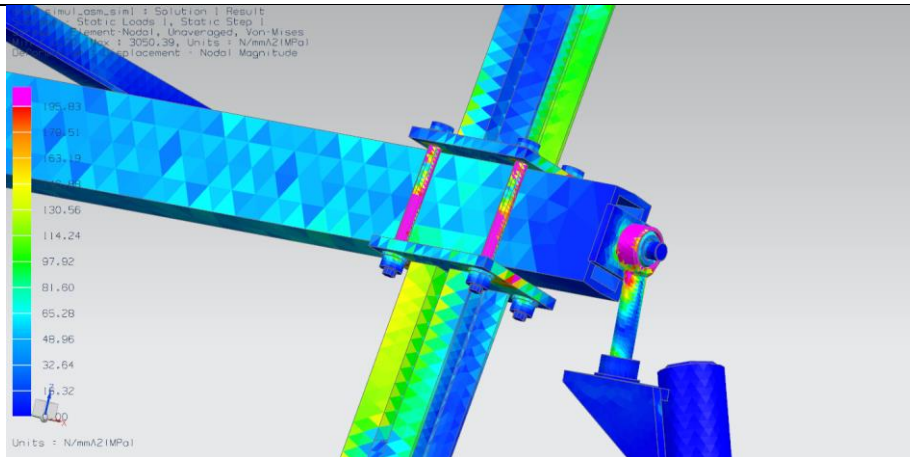


Deformations in 24 port distribution panel due to load during operation

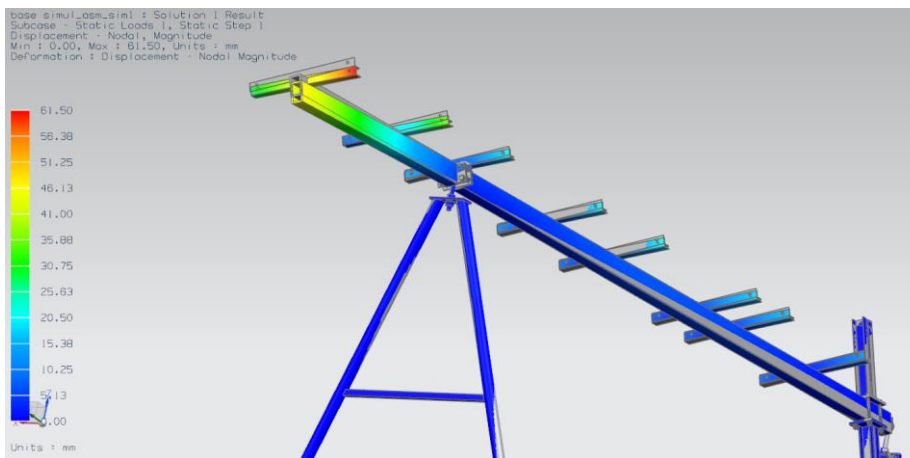
Customer	DEAN GEBOYDETECHNIK BULGARIA LTD
Contact	Alexander Trichkov , trichkov@googlemail.com
Task	Design and analysis of photovoltaic tracker
Results	Optimal in terms of price-reliability Mounting and operating of a number of photovoltaic panels for extreme climatic conditions for minimal maintenance and remote control of the tracker



3D model of the working positioning of the tracker - kinematic simulation

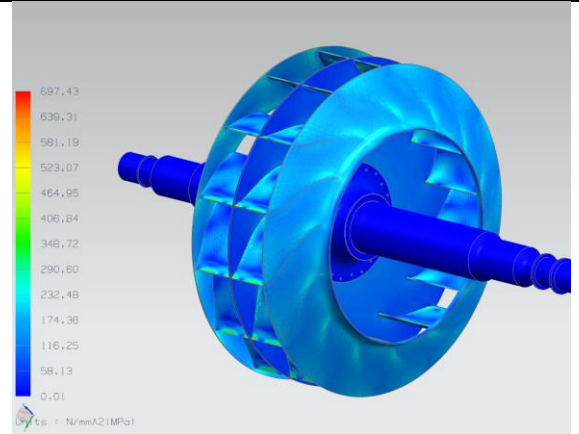


Distribution of critical load zones

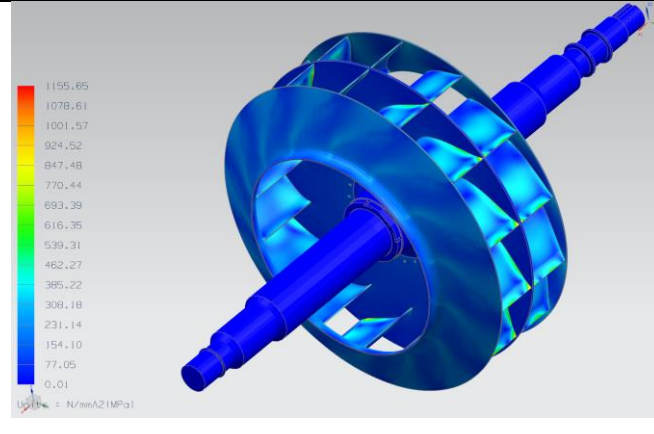


Simulation of the tendency for deformation under load

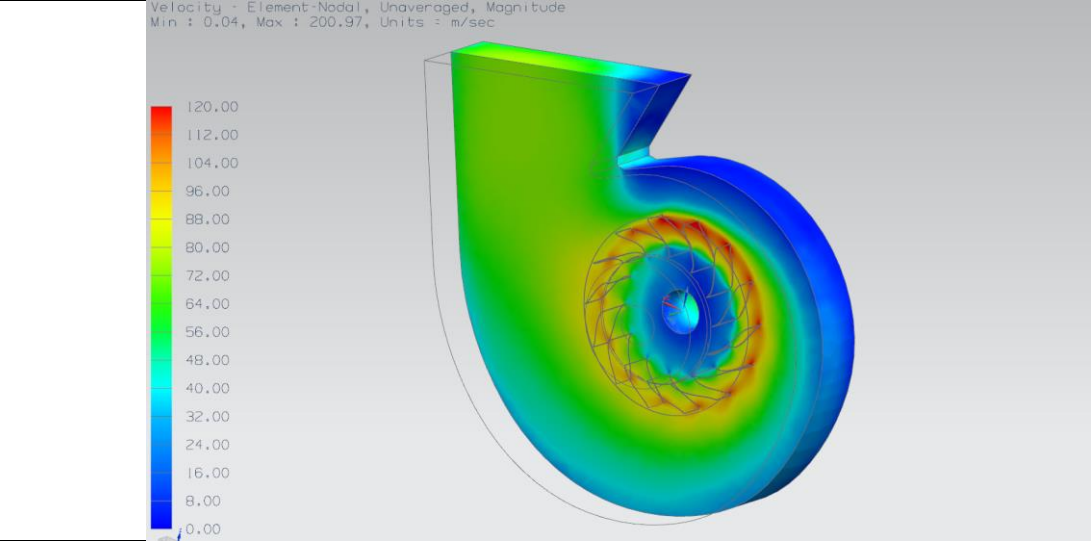
Customer	Metalic PLC, Stara Zagora http://www.idagroup-bg.com/en/Metalik.htm
Contact	Zhivko Matev, matev@metalik.idagroup-bg.com
Task	Investigation of the process for optimal design of a smoke fan for the mining industry through multi-physical simulation
Results	The simulation, analysis and optimization of the design solution and materials ensure optimal flow at medium speed and prevents accidental repairs from destruction and imbalance at starting and maximum load



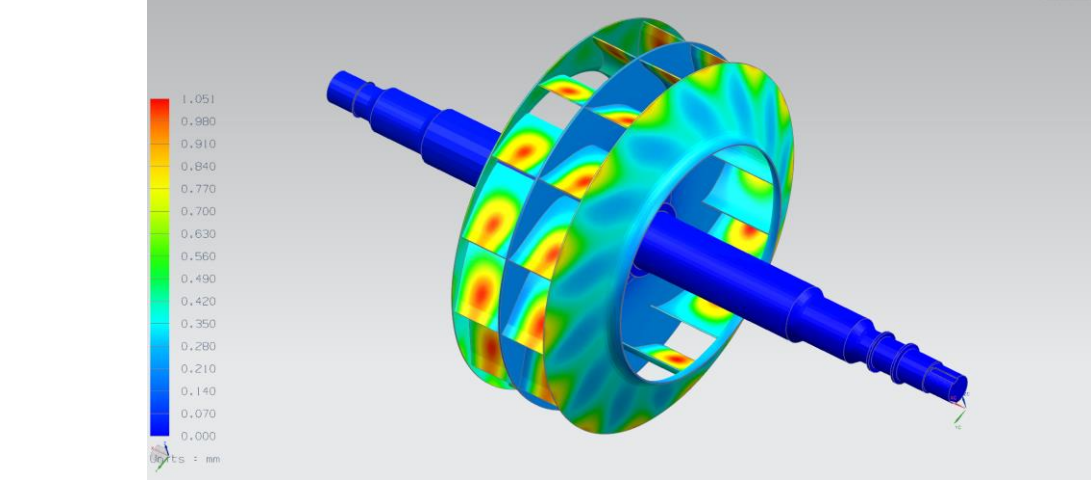
Load on working blades in operating mode



Load on working blades at initial start-up



Fluid velocity When the smoke blower is in operation



Analysis of deformations on work surfaces